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IMPLEMENTATION OF THE CONVENTION

(a) REVIEW OF REPORTS ON IMPLEMENTATION OF AFFECTED COUNTRY PARTIES OF REGIONS OTHER THAN AFRICA, INCLUDING ON THE PARTICIPATORY PROCESS, AND ON EXPERIENCE GAINED AND RESULTS ACHIEVED IN THE PREPARATION AND IMPLEMENTATION OF NATIONAL ACTION PROGRAMMES

(b) REVIEW OF THE REPORT ON PROGRESS MADE IN THE FORMULATION AND IMPLEMENTATION OF SUBREGIONAL AND REGIONAL ACTION PROGRAMMES IN REGIONS OTHER THAN AFRICA

Addendum

COMPILATION OF SUMMARIES OF REPORTS SUBMITTED BY ASIAN COUNTRY PARTIES[2]

Note by the secretariat

1. By its decision 4/COP.3, the Conference of the Parties (COP) decided to undertake, at its fourth session, the review of reports on the implementation of affected country Parties of regions other than Africa, including reports on the participatory process and on experiences gained and results achieved in the preparation and implementation of national action programmes.

2. Pursuant to decision 11/COP.1, the secretariat was requested to compile the summaries of reports submitted by affected country Parties and submit the compilation to the Conference of the Parties for consideration and for any action the COP may wish to take. Decision 11/COP.1 also provided procedures and formats for reporting to the COP and required, in particular, a summary of the national reports, not to exceed six pages.

3. The present document contains the summaries of national reports submitted by twelve country Parties from the Asian Region. These are: Bahrain, Bangladesh, Cambodia, China, Fiji, India, Indonesia, Iran (Islamic Republic of), Jordan, Kazakhstan, Kuwait and Kyrgyzstan. The secretariat will also make this compilation of summaries available on its Web site (www.unccd.int) for wider circulation.

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[1] ICCD/COP(4)/1.

[2] Reproduced without formal editing.

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BAHRAIN

Concerning the water crisis in arid and semi-arid areas, Bahrain has been tenaciously following the strategy of preserving its water resources on the one hand, while maintaining the greenery over most of the area on the other. The adverse agro-climatic conditions and soils of the country motivated the Government of Bahrain to see into the challenge of growing fauna and flora on the lands available. The socio-economic factors though have taken their toll, yet the government policies within the framework of the region have been conducive to combating desertification.

Following the National Action Plan 1992, Bahrain acceded to the United Nations Convention to Combat Desertification in 1997. The ground work was thus prepared as a direction to follow.

Located in the equatorial region and having a hot and humid climate, Bahrain has a comparatively high population density with a growth rate of 3.6 per cent per year. A high evaporation rate of 2,600 mm/year and scanty rain of 72 mm/year, together with sandy soils containing negligible organic matter, restricts the growth of natural vegetation.

Besides, the deteriorating piezometric levels of groundwater with increasing salinity from 3,400 PPM to 11,000 PPM lead to a formidable water crisis. Rapid salinization of soils and the shift of rural population to urban industrial growth of the oil boom of the 1970s prompted the Government of Bahrain to look for alternative sources of irrigation water, manoeuvring of agricultural land and improvement of the environment.

The economic policy and development plans have called for diversification of the production base away from oil and the promotion of the private sector. To overcome constraints in the current level of agricultural activities, the guiding Strategy for Conserving Agricultural Areas and Combating Desertification, aims at two dimensional approaches: (a) to reduce groundwater abstraction from natural aquifers and (b) to preserve the existing agricultural land and the landscaping.

In order to implement the two approaches, Bahrain, in spite of limited financial sources, has attempted to implement several measures through formulating legislation, improving irrigation methods, replacing high-irrigation requirement crops with others, introducing tariffs for using underground water, using the TSE (treated sewage effluent) for irrigation, constructing land drainage, zoning of agricultural land, improving agricultural research activities, enhancing agricultural extension services and supporting agricultural inputs by limited levels of subsidies.

Legislation to strictly monitor the use of groundwater and the drilling of wells is in place with effect from 1997. Besides, the Amiri Decrees in respect of organizing date palm protection and land drainage system are effective to protect the state infrastructure to combat the menace of shrinking agricultural land.

Modern irrigation methods like drip and sprinkler irrigation are willingly followed to replace the traditional methods of flood and unlined channels. It is expected that about 13 million m^3/year of groundwater will be saved in this manner.

The plantation of the high-water consuming crop of alfalfa is being discouraged and is being replaced gradually by xerophytic crops like Rhodes grass, barley, oats, rye grass, Sudan grass, and others. It is estimated that this replacement will save more than 15 million m^3/year of invaluable water.

One of the main reasons for over-irrigation practices in agriculture and landscaping is the availability of underground water free of charge. This conservative method has resulted in very high proportional use of water as compared with other countries facing similar situations. Imposing a nominal charge per cubic metre would help prevent further deterioration of groundwater and would save more than 17 million m^3/year.

Realizing the importance of recycled water in agriculture, Bahrain implemented Phase-I of utilizing the treated sewage effluent (TSE) in 1984. About 660 ha of agricultural area has already been rehabilitated using 35,000 m^3/day of the TSE.

Phase-II has been initiated in 1997 and is on its way to implementation. A network of expanded treatment plants, storage reservoirs, transmission lines, a network of irrigation distribution lines, 150 km in length, up to the irrigation well on each farm, as well as to landscaped areas for beautification and afforestation are salient feature of the scheme.

The network will be completed within the next three years, and the production of TSE will reach 200,000 m^3/day in the year 2011. This will irrigate more than 2400 ha of water-thirsty agricultural land. TSE Phase-II is estimated at about BD 55.4 million (US$146.6 million). A saving of 50 million m^3/year of groundwater will result from the project.

A well-planned drainage system is a pre-requisite to maintaining the sustainable agriculture. Bahrain, being no exception, is implementing a drainage network under Amiri Decree No (4) which governs the organization and maintenance of the land drainage system intact. A total of 120 km of drains will be constructed under TSE Phase-II.

In order to protect agricultural land from urban encroachment, the zoning of agricultural land has been undertaken. The Amiri Decree No. 29/83 to protect the date palms in the country aims to preserve the heritage of natural resources and the environment. Zoning of agricultural land would lead to a symbiosis of rural and urban communities to flourish together.

Agricultural research, agricultural extension and supporting the agricultural inputs through limited subsidies are Bahrain's contribution as part of its efforts to combat desertification. However, there are certain requirements which need to be looked into.

Bahrain's agriculture contributes about 1 per cent to the GDP. Although its resources are limited, nevertheless Bahrain has built a solid infrastructure for agriculture, especially in irrigation and drainage. The TSE Phase-II is costing US$146.6 million. In order to further strengthen the activities to combat desertification, however, technical as well as financial supports are needed. They are to be assessed in light of requirements with a view to rehabilitate agricultural land activities.

The Ministry of Works and Agriculture is prepared to form a National Committee from the concerned organizations in Bahrain and to implement the valuable findings and recommendations by the United Nations Convention to Combat Desertification.

BANGLADESH

Bangladesh is a South Asian developing country located between 20°34′ to 26°38′North latitude and 88 °01′ to 92°42′ East longitude with an area of 147,570 sq. km. and a population of 125 million with very low per capita gross domestic product, i.e. 241 dollars. (BBS, 1996). Geologically, it is a part of the Bengal Basin filled by sediments washed down from the highlands on three sides of it, and especially from the Himalayas, where the slopes are steeper and

the rocks less consolidated. It is bordered on the West, North and East by India, on the South-East by Myanmar and on the South by the Bay of Bengal.

An understanding of the physical environment of Bangladesh is essential for the appraisal of the country's land degradation and aridity problems. The climate is sub-tropical, warm and humid in the summer, dry and cool in the winter. The summer is the hottest period with the maximum temperature exceeding 40 degrees Celsius and is characterized by Nor'westers (thunderstorms) as well as a high evaporation rate. The temperature in Bangladesh varies between 10 to 40 degrees Celsius. It peaks during April and the minimum is recorded in January. The North Western region in Bangladesh is the driest part where rainfall is the lowest, experiencing aridity and drought conditions.

Bangladesh is a signatory of the United Nation Convention to Combat Desertification (UNCCD). It was signed in January 1996, and after ratifying, the country became a Party to it. The Convention came into force in 1997. In the Convention, desertification is defined as the degradation of land in arid, semi-arid and dry, sub-humid areas primarily caused by human activities and climatic variation. Desertification occurs because dryland ecosystems are vulnerable to over exploitation and inappropriate land-use, which is a concern to half of the territory of Bangladesh and justifies and validates the country to take part in UNCCD.

Among the many environmental issues facing Bangladesh, land degradation due to aridity and the loss of crops due to drought may have caused more human suffering than any other problem in the concerned areas. Drought-prone areas make up almost one third of Bangladesh, particularly the North-Western part. The boundaries of these areas are delineated by low and highly variable annual rainfall. The evaporation rate in most of those areas is higher for more than seven months than the precipitation rate. The extraction of groundwater for irrigation purposes is not adequately recharged. Consequently, aquifer levels of the groundwater is going down. UNDP, under the Sustainable Environment Management Programme, is supporting the Ministry of Environment and Forest to implement one of the projects devoted to sustainable management of dry land in the Barind Tract which is one of the driest areas.

A major cause of land degradation in Bangladesh is overexploitation of biomass from the cultivated field. This phenomenon is evident in the Barind and Madhupur Tracts, as well as the northern piedmont plains. The consequence is accelerated water and wind erosion of the topsoil. An ancillary aspect of biomass exploitation is large-scale deforestation in these areas, primarily for fuel and timber needs. The impacts of forest destruction include deterioration in vegetation cover and soil moisture contents, and potential decline in soil fertility due to nutrient losses. Shifting cultivation in the southeastern hills is another wasteful agricultural practice causing land degradation through excessive runoff and accelerated soil erosion and mass wasting. The use of pesticides and other agrochemicals is another causative factor for land degradation through contamination of soil in the long run. Degradation of land in several parts of Bangladesh, especially in the North-West, is largely the result of direct human intervention. The Barind Tract - once rich with vegetation cover - is now showing symptoms of desertification in the board of the term, and is in urgent need for effective policies to combat the process (Rasheed, 1998).

As a signatory of the Convention, preparation and implementation of the National Action Program (NAP) is an obligation of the country to address the concerned problems. The Ministry of Environment and Forest had taken priority action and organized a National Awareness Seminar on "Combating Land Degradation and Desertification" in 1998 with assistance from UNCCD. This has created the opportunity of public awareness, ensuring inter-sectoral discussion at public, private and civil society level on issues and consequences of land degradation, drought, aridity and desertification. As a follow-up to this event, Government,

universities and NGOs came up with action research programmes. In particular, it is worthy to mention Barind Multipurpose Development Authority (BMDA), a Government agency devoted to carrying out huge programmes to combat aridity and desertification in the North-Western part of Bangladesh. NEMAP follow-up action toward combating desertification is another initiative to this end. In this regard it is also significant to note that the International University of Business and Technology submitted a proposal for UNDP-GEF funding for "Reversing Desertification in the Barind Tract of Bangladesh through Integrated Ecosystem and Resource Management" which is actively under consideration.

Following the Environment Policy 1992, the Government established a broad-based National Environment Committee (NEC), chaired by the Honb'le Prime Minister, along with a corresponding Executive Committee chaired by the Honb'le Minister for Ministry of Environment and Forest. The National Environment Committee consists of 59 members from all line Ministries, Departments, Chambers, Journalists, Professionals, NGOs and civil society bodies. According to its terms of reference, the National Environment Committee has the following responsibilities:

- to review the progress of activities towards implementing the National Environment Policy, which includes land degradation and desertification issues;

- to consider implementation of the decisions taken at the United Nations Conference on Environment and Development (UNCED) in 1992;

- to identify inter-ministerial problems in respect of the National Environment Policy and recommended remedial options;

- Bangladesh has signed, ratified or acceded to 22 international Conventions, Treaties and Protocols related to the environment, climate change, biodiversity, phase-out of ozone, hazardous waste and combat desertification and so on. The Bangladesh National Environment Committee and National Executive Committee of National Environment Committee are responsible to overview the progress of the implementation and provide remedial options, as well as policy directions.

The Ministry of Environment and Forest is designated by the Government of Bangladesh to work as the National Focal Point for UNCCD. The Government is also actively considering formation of a National Coordination Body, as well as a National Steering Body, to fulfill the requirement of the UNCCD, which has also been endorsed in the National Awareness Seminar on "Combating Land Degradation and Desertification" held in Dhaka in 1998.

The Government of Bangladesh is supporting a number of programmes and projects to address environmental degradation and natural resource management, particularly though stakeholders participation. The Ministry of Environment and Forest is implementing the Sustainable Environment Management Programme (SEMP), which is a follow-up implementation of NEMAP. SEMP is the largest environmental program of UNDP at a global scale with a grant of US$26 million. It has 26 components under five subprogrammes such as Policy, legislation and Institutions, Participatory Ecosystem Management, Community Based Environmental Sanitation, Awareness and Advocacy and Training and Education to mainstream the environment in collaboration with 17 line Ministries, 15 National NGOs and three international organizations, including IUCN and the World Bank.

One of the SEMP components devoted to addressing the issue of dryland ecosystems under "Ecosystem Management in Barind Areas" focuses on reversing aridity and enhancement of dryland ecology with an approach of participatory ecosystem management leading to sustainable development of the concerned area. The objective of the project is also to demonstrate working models of improvements in dryland ecosystems with improved water management and

regeneration of indigenous flora and fauna through community participation in the vast tract of the Barind Region.

Along with environmental documentation and awareness components, SDNP has one component for "Sustainable Development Networking Programme (SDNP)" to disseminate the message and information to the hundreds of institutions and civil society, as well as public institutions involved in development work. SDNP will also develop national capacity-building to advance the cause of environmental as well as human resources development in the concerned area at government, business communities, NGOs and civil society level.

Since the Department of Environment (DoE) is the implementing organ of the Ministry of Environment and Forest and responsible for carrying out the mandates of the UNCCD, it is important to note the capacity-building issues of the Department. The Bangladesh Environment Management Project (BEMP), with the financial support from CIDA, is now under implementation with the objective of strengthening the capacity of the Department of Environment for accomplishing institutional planning to enable DoE to fulfill its legislated mandates inclusive of GoB and donor projects. It will also improve DoEs infrastructure capability to formulate environmental regulatory instruments and will help implement their procedural and enforcement applications. Such implementation will include necessary legal inputs for dissemination of the substantive, legal implications of these instruments to the relevant parties. The project is also developing an environmental database and information system on various aspects of the environment and management practices which could be used to address the requirements of UNCCD, amongst others.

In the back drop of the issues and concerns discussed, it is important to detect the problem and to carry out intensive monitoring and assessment of the aridity and desertification process in the region concerned. Therefore, baseline and monitoring of degradation/desertification is needed, which is again a very difficult and complex task. A sufficient number of monitoring stations could be set up in order to provide adequate spatial coverage of the vulnerable area. Remote sensing imagery can be used to assess plant cover and biomass with proper ground truthing. A multidisciplinary team of experts from various scientific, government and non-government organizations working in the field of land degradation, drought and desertification already exists but the Government is planning to coordinate all the efforts under the UNCCD initiative.

CAMBODIA

I. Major Ecosystems of Cambodia

The natural ecosystems of Cambodia consist of tropical forests, rivers, lakes, and coastal areas. Man has influenced these natural ecosystems over thousands of years. Forests has been cleared to create Rice Growing land, thereby giving rise to rice ecosystems. The movement of humans to live in cities, towns and villages is known as urbanization. These towns and cities can be described as urban ecosystems.

1.1 Rice Ecosystems of Cambodia

The rice ecosystems are among the most important terrestrial ecosystems to the Cambodian population in terms of food security. As in any other ecosystem, there are living and non-living components and rice is undoubtedly the most important living component of the ecosystem.

- Rainfed lowland rice or wet season rice
- Deepwater or floating rice
- Rainfed upland rice or Chamkar rice
- Dry season irrigated rice

1.2 Wetlands

The majority of Cambodia's freshwater wetlands are found around the Tonle Sap Lake and along the Mekong River and its tributaries. They comprise the Tonle Sap Lake, other permanent lakes and swamps, and annually inundated flood plains. The total wetlands area increases nearly ten-fold from about 0.5 million ha in the dry season to 5 million ha in the wet season (July-September) in an average year. The Tonle Sap Lake alone increases four-fold in an area from 250,000 ha in the dry season to about 1,000,000 ha in an average year, and to about 1,350,000 ha in a wet (heavy rained) year. The surface of the lake was reported to have from 2,700 km^2 during the dry season to approximately 16,000 km^2 at the maximum level of flooding, and the water level depths vary between 1m in the dry season to 9m in the wet season (Guiscafre, 196)).

1.3 Rivers and Lakes

Mekong River - Tonle Sap system dominates the hydrology of Cambodia. The Mekong River rises in the Tanghla Shan Mountains in the Tibetan Plateau and flows through Myanmar, Laos, Thailand, Cambodia and Vietnam. A further 10-20 per cent from the Sesan, Srepok and Sekong in North-Eastern Cambodia and the remaining 10 per cent from the rivers that drain Cambodia into the Tonle sap Lake (Pantulu, 1986). Eighty-six per cent of the land of Cambodia lies within the catchment of the Mekong River.

II. The Status of Land and its Changes

Human activities are continuously changing and affecting land and the landscape. In this context, the rapidly increasing world population has placed great demands on the available living space in many countries. In Cambodia, business interests takes precedence over small-scale farmers, forcing many subsistence farmers to give up their land to be replaced by industries or commercial farms which require skilled or semi-skilled workers.

2.1 Land Usage and Fertilizer Use

2.1.1 Land Usage

The cultivated area, 21 per cent is mainly concentrated in the lowland around the Tonle Sap Lake and in the south of the country, on the north side of the Mekong River. The Uplands crop/fruit garden occurs especially along the banks of the main rivers.

The main constraints rely to soils in crop production in Cambodia are:

- The lost of soil fertility in cultivated areas cause from poor soils management and cultural practices;
- Devastation and its erosion cause from the process of deforestation and shifting cultivation of ethnic groups in uplands slope;
- Drought and flood cause to soil degradation and erosion;
- High concentration of acidity and/or salinity in some dry season rice production areas;
- Large change fluctuation of environment as increase big gape of temperature cause to soil moisture content and soil fertility;
- Farmers have a very limited input to improve soil fertility;

- Low literacy cause the constraints to adopt the new modern technology to improve soil fertility;

- Unavailability of credit in rural areas to purchase fertilizers;

- Poor fertilizer application and use cause the destruction in soil structures and soil texture.

2.1.2 Fertilizer Use

Fertilizer application, together with modern varieties, irrigation and other improved management practices has been driving the growth in food production in South-East Asia over the past 25 years. Fertilizer use in Cambodia, however, has been very small as compared to the other countries in the region. Cambodia farmers applied between zero and 8,000 tons of organic fertilizers (NPK) per annum in the period 1965 to 1990, but with upwards of 40,000 tons per year has been applied for the last two years (FAO unpublished data).

2.2 The Change in Areas of Rice Field Ecosystems

The main causes for rice ecosystems changes are observed to be from basic factors: warfare, population growth, poverty, security issues and development trends. It is basically ascertained that economic development, mainly in the agriculture sectors, has been much more intensified during last decade, controversy sometimes to the wise use concepts or sustainable development (for example: rice fields expansion, over-fishing, over-grazing).

2.3 The Conflict Uses of Areas

There have been presently conflicting uses of rice fields, as due to various development practices:

- Agricultural development: rice and other crops harvesting (traditionally) and rice-fish farming;

- Industrial development: many rice fields have been filled for constructions of factories, manufactures and handicrafts, building of many new settlements and other as well;

- Other building and infrastructures.

2.4 The Impact Assessment Towards Human Activities

In Cambodia the major root causes of soil erosion are deforestation, poor agricultural activities (shifting cultivation) and gemstone mining activity in the border area between Cambodia and Thailand. High erosion has taken place at the North-East mountain ranges and high plateau along main tributaries of the Mekong River, and at the North-West high plateau, where sediment flows into the Tonle Sap Lake.

2.5 Land Issues in Cambodia

One of the major concerns regarding public land in Cambodia is the number of leases and concessions that have been made in recent years. Problems to the granting of these leases and concessions include:

- a lack of policy framework and accurate information to guide land use allocation;

- selling of national assets for very low prices to businessmen and foreign investors;

- the commitment on the development of agricultural crops in the land concession areas not been done by many investors and/or stakeholders from both local and external.

The suggestion for optimizing use of Cambodia's land resources include:

- incorporate social, environmental and economic costs when considering the benefits of any land development;

- consider the public assets for future generations needs;

- introduce and implement measures to protect soil and water resources (to prevent floods, ensure safe water supply, and protect farm production);

- ensure capability of land-use allocation with local communities who use or need access to the same piece of land.

III. The Socio-Economic Impacts

However, today's Cambodia not only can not provide rice to the external market, but also does not produce enough rice for local consumption too. For the question of why Cambodia faces a food shortage? The answer is for many reasons: the large population growth, while the agriculture land is continued to decrease has long been a major driving growth in demand. The chronic continuation of civil war, which is leading to the massive destruction of economic and social infrastructures, but the more predominant of its was the drastic changes in natural conditions, in which farmers could not adapt to its changes.

IV. The Implementation of the National Policy on the Implementation of the CCD (Legal, Institutional and Management Aspects)

4.1 Legal Aspects

The constitution of the Kingdom was adopted in September 1993. And over two dozen laws have been adopted since 1993, including the land management, urbanization and construction law, and the laws establishing the rights and responsibilities of various ministries. There are many other laws that are still awaiting execution by Parliament.

4.1.1 Existing Legislation Related to Environmental Management

A- Pre - 1993 Laws:

B- Post - 1993 Laws:

- Law of Land Management, Urbanization Planning and Construction;

- Law on Environmental Protection and Natural Resource Management;

- Sub-Decree on Construction Permission;

- Royal Decree on Creation and Designation of Protected Areas.

Ratification of International Conventions

Forestry Law

This law is being prepared by the National Commission on Forestry Policy Preparation and Reform, Ministry of Agriculture, Forestry and Fisheries (Department of Forestry and Wildlife), and will be submitted to the National Assembly by the end of 2000.

Mining Law, Petroleum Exploration Law and Factories Law

These laws were submitted to the council of Ministers for reviewing and will be adopted by the Government this year and then it will be submitted to the National Assembly.

4.2 Institutional Agency

The Government agencies responsible for water resource management are the following:

1. Ministry Agriculture Fishery and Forestry;
2. Ministry of Environment;
3. Ministry of Rural Development;
4. Ministry of Land Management, Urbanization Planning and Construction;
5. Ministry of Water Resource and Meteorology; and
6. Other Institutions concerned.

V. The Strategic Policy on the Implementation of the CCD

5.1 The Mitigation of Drought and Flood

The Kingdom of Cambodia is fully depending on the Agricultural Sector, and its play as the main fundamental base of the development, because more than 80 per cent of the Cambodia Population are farmers. In this regard, the Royal Government of Cambodia has foreseen that the major issues of social stability in which the main work is "Water Policy" (53 projects has been launched in 13 provinces and municipalities from 1998-2006).

5.2 The Collaborative Activities with International Agencies

To reach these goals and objectives, the Ministry of Agriculture, Forestry and Fisheries pays much attention to Human Resources Development and Institutional Strengthening through Capacity Building. The improvement of Agricultural Infrastructure (irrigation and roads) that many base upon Technical Assistance, Grant Aids and/or loans from FAO, IMF, WB, ADB, USAID, AusAID, JICA, DANIDA, EU, IFAD, MRC-International, UNESCO and other donor communities as well. For the long-run sustainable development non-paradoxically needs sustainability in natural resources management. In this context, the Law in Forest Management Reform (Forest Concession Law), Law in Community Forestry, many other as regulations and PRAKAS such as Depression of Anarchy Activities in Forestry, had and have been prepared in close technical assistance with foreign experts from the World Bank, the Asian Development Bank and many other from the international community such as FAO, GTZ, OXFAM, JICA.

5.3 Future Recommendations Policy on the Implementation of CCD

To achieve sustainable growth - growth consistent with the needs and constraints of nature - we need to secure the link between environmental and economic policies at all levels of Government and in all sectors of the economy. Harmonizing economic expansion with environmental protection requires a recognition that there are environmental benefits to growth. However, today's Cambodia is not in the full capability (both technical, financial and institutional) to combat desertification, therefore, the following policy recommendations should be taken for the future:

- The more clear policy concerned should be developed;
- Immediate enforcement of the national economic (both micro- and macro-economy);
- Foster building human capital;
- Institutional Strengthening, improving the coordination between pipe line ministries;
- Build the close cooperation with: UNCCD-NETWORK, UNESCO, GEF and other international communities concerned.

CHINA

China is one of the most severely affected countries suffering from desertification. The total area of desertification affected land is approximately 2,622,300 sq. km., occupying 27.32 per cent of the total land territory, or 79.1 per cent of the total areas of arid, semi-arid and dry sub-humid areas. Desertification affected lands are mainly distributed in the North-West, North and North-East of China. As a consequence, desertification worsens the ecological environment, accelerates further poverty and invades the survival space of Chinese people.

China does not only attach great importance to desertification rehabilitation and to the implementation of its NAP, but also pays serious attention to cooperation between country Parties, to the implementation of the UNCCD and to the global efforts to combat desertification.

DESERTIFICATION HAZARDS IN CHINA

The patterns of desertification affected land are complex with high variation of causes and formation, including: desertification affected lands caused by wind erosion, occupying 1,607,400 sq. km; desertification affected lands caused by water erosion, covering 204,600 sq. km; desertification affected lands caused by freezing and melting processes of cold plateau, representing 363,300 sq. km; desertification affected lands caused by salinization/alkalization, forming 233,200 sq.km. Human factors activate and accelerate processes of desertification as primary dynamics which cause desertification.

Land desertification develops as a rapid process of spreading and accelerating. The annual invading are of desertification process in 1950s was 1560 sq. km; desertification expanded with an annual rate of 2100 sq.km. Desertification threatens directly people's production and the environment.

It is estimated that there are 400 million people threatened by desertification and the annual direct economic loss caused by desertification is approximately 6.5 billion US dollars. Desertification causes further poverty in rural areas.

SUSTAINABLE DEVELOPMENT PROGRAMME AND THE PRIORITY AREA

As one of the major efforts to protect the environment and to realize sustainable development, desertification rehabilitation has been incorporated into the State Economic and Social Development Plan.

Taking into consideration the sustainable development strategy, "Forestry Action Plan for China Agenda 21" has been developed by SFA on the basis of China Agenda 21 that has been developed by the central Government.

Considering the reality of the ecological environment improvement of China, the State Council has ratified "China's Action Plan of Ecological Environment Improvement". The key locations and main projects of the priority areas of the plan include: the upper and middle reaches of the Yellow River, the upper and middle reaches of the Yangtze River, wind-sand impacted land areas and rangeland and steppe areas which are mainly desertification affected areas. The plan is included into the National Economic and Social Development Plan.

CONCRETE ACTIVITIES FOR UNCCD IMPLEMENTING AND EFFECTS

Establishment of a coordination unit

Since the accession at the UNCCD in June 1994, China has developed her NAP and determined the strategic objectives to combat desertification. In order to implement the UNCCD, the Chinese Government has established various management agencies at different levels to strengthen the institutional building for combating desertification. In 1994, the Chinese Government has set up China's National Coordinating Group to Combat Desertification and the China National Committee for the Implementation of the UNCCD (CCICCD) composed of 17 ministries, state commissions, and a liaison system. The secretariat of CCICCD is located in the State Forestry Administration. The secretariat is mainly responsible for guiding, coordinating and supervising the work in combating desertification. The financial resources of the secretariat come from the national allocation, which are mainly used for publicity, technology extension, training and staff salary.

The National Bureau to Combat Desertification was established in 1991. Its main role rests on the management of projects of combating desertification and ecology restoration. Coordinating or leading groups for combating desertification have also been set up in affected provinces. Therefore, the effective management system for combating desertification from central to local level is established. CCICCD has set up its subdivisions, such as Senior Expert Group, Liaison Office of China National Coordinating Group to Combat Desertification and Independent Expert Roster for Combating Desertification in China. They have provided a lot of valuable advises on the National Action Programme, China Country Paper to Combat Desertification, National Survey of Desertification Monitoring and provided consultation in the related field for combating desertification.

In 1995, the secretariat of CCICCD has instituted China National Research and Development Center of Combating Desertification, China National Training Center for Combating Desertification and China National Desertification Monitoring Center.

In 1997, UNDP has formulated and assisted CCICCD through a project on capacity-building and demonstration for combating desertification. The URL of http:/www.din.net.cn and a County-level Desertification Information and Data Exchange Prototype in Yijinhuoluo County of Inner Mongolia have been established.

Participating in the Implementation of the Regional Action Programme

The Chinese Government hosted the First Meeting of the Asia-Africa Forum to Combat Desertification in May 1996 with the assistance of the secretariat of the UNCCD, UNSO and the Japanese Government. China also hosted the Beijing Ministerial Conference on Regional Cooperation to Implement the UNCCD in Asia and the meeting endorsed six priority thematic programme areas for regional cooperation in Asia.

China hosted the Asia-Africa Technical Workshop on Early Warning System, Second Asian Meeting of the UNCCD National Focal Points and the Launching Meeting for the Thematic Programme Network on Desertification Monitoring and Assessment (TPN1) in 1999. China is the host country of the Asian Thematic Programme Network on Desertification Monitoring and Assessment (TPN1) and is going to establish the Asia-Africa Research, Development and Training Center for Combating Desertification.

Acceleration of International Cooperation

The Chinese Government has built up close relationships with many international organizations and countries through various means, including bilateral and multilateral channels in the field of combating desertification. Within the spirit of UNCCD, the German Government has financed one project to combat desertification in Chifeng, Inner Mongolia in 1999. China is ready to establish new cooperation with Korea, Japan, and other country Parties.

Strengthening Legal Guarantee System

Up to the present, China has promulgated about 20 laws relating to environmental protection and a series of by-laws and regulations. The National People's Congress has begun since 1998 the legislative process of formulating a law of combating desertification to implement sustainable development strategy, prevent land areas from desertification, bring desertified land under control and manage land wisely. The Chinese Government is striving to establish an effective legal system so as to address the key issues regarding combat of desertification and harmonize the Law of Combating Desertification in harmony with other related laws.

Desertification Monitoring and Early-warning System

A nationwide inventory on desertified land was carried out in China from 1994 to 1996. In accordance with the spirit of UNCCD, the China's Country Paper to Combat Desertification was compiled and it was accomplished China's desertified land area distribution map at a scale of 1:2.5 million. Starting from 1999 has been carried out the nationwide desertification monitoring with thousands of sampling plots. Dynamic Monitoring, Prediction, And Early-Warning System Of Desertification, Serving As Scientific Evidences For Decision-Making.

China attaches importance to the summarization of the traditional knowledge and practical techniques for combatting desertification. The Chinese Government strive their efforts for public awareness raising in combating desertification. Since the first World Day to Combat Desertification and Drought on 17 June 1995, China has carried out large-scale publicity and public awareness-raising activities to combat desertification in Beijing and other dozens of large cities.

Review on Benchmark and Indicators of Desertification Monitoring and Assessment

The Chinese Government has attached great importance to the establishment of desertification benchmark and indicators of desertification monitoring and

assessment. The Commission, in 1996, listed a topic of "Indicators System for Sandy Desertification and Dynamic Evaluation" at the Ninth Five-year Plan (1996 - 2000) key project of "Desertification Combating Technology Study and Demonstration". In 1998, the National Natural Resources Committee approved and funded a research project of "Desertification Occurrence Mechanism and Optimistic Model for Combating Desertification" (1999-2002) that again includes the topic of "Indicators System of Desertification Classification and Expert System". In the meantime, China Desertification Monitoring Center drafted "the Master Plan of China's Desertification Monitoring Technology" and "the Regulations of the Fixed Location Monitoring Technology in the Typical Desertified Areas of China" and both of them were revised three times.

COMPILATION AND IMPLEMENTATION OF NAP

The Chinese Government has formulated the NAP in 1994. The compilation of the NAP was made in the light of the UNCCD, "China, Agenda 21", and on the basis of the existing large-scale, trans-regional, trans-watershed ecological improvement programme action plan established by the Chinese Government, such as the National Action Programme to Combat Desertification, "Three North Regions" Shelterbelts Development Programme, Plain Farmland Shelterbelts Development Programme.

In recent years, the State Forestry Administration organized an in-depth survey and analysis of the ongoing NAP to Combat Desertification, which commenced in 1991. This survey and analysis have played a critical role to secure the scientific and practical foundation of the new version of NAP. The Chinese Government has updated some components of the 1994 version of the NAP in the light of the new developments and the National Eco-environment Improvement Plan which presents a blueprint, strategic policies for ecosystem and environmental protection and strategic objectives on combating desertification in China.

The National Action Programme has started to be implemented and its financial resources come from three sources, i.e. central government allocation, locally-raised funds and loans with negative interest of Bank. In addition, the Ministry of Finance also provided funds for desertification monitoring.

THE FRAMEWORK OF NAP

The special situation of the desertification in China determines the control measures adopted in the NAP to be dominated by biological measures, and the current strategy to combat desertification is from potential risk to severe situation.

Strategic Objectives in Different Phases

China's strategic objectives for combating desertification shall require first the implementation of the principle of prevention and integration of prevention, control and utilization, adopting the tactics of overall control and breakthrough in critical areas so as to check the expanding trend of desertification. To this end, three phases are designed: 1996-2000, 2001-2010 and 2011-2050, which are consistent with China's national economic and social development plan.

By 2000, the continuous expansion of desertification has been mitigated to some extent; the environmental conditions in some areas have been improved and people's living standards raised substantially.

By 2010, regional environmental conditions in desertification affected areas will be improved considerably and people's living standards greatly improved.

By 2050, the overwhelming majority of the desertification affected land, excluding areas with extremely adverse conditions, will be brought under effective control; total area of nature reserves will cover 91.35 million hectares and the local environment and economic development in the desertification affected areas will enter into a virtuous cycle.

Priority Areas

Priority areas of the NAP include the following four aspects: acceleration of revegetation in the affected region, capacity-building for desertification monitoring, prediction and early warning system, extension service and adaptation of advanced practical technology, creation of a network of public education for combating desertification.

Task and Overall Arrangement of Backbone Projects of NAP

The determined task of backbone projects is 17.867 million hectares, in light of the climatic and physical conditions, status and features of distribution of desertified land, the existing problems and similarity in control measures. The programme is subdivided into arid marginal and desert oasis zone; arid, semi-arid and dry sub-humid desertified land zone and arid cold plateau zone affected by desertification and land degradation. Eleven engineering projects are needed to be accomplished in the above-mentioned three special zones.

Guarantee System to Implement Projects

The guarantee system for implementing projects should include the definition of responsibility of local governments for implementing the project. The establishment of a sound mechanism to implement projects, the adaptation of advanced practical technologies and research results, and promotion and optimization of management mechanism of the projects are the essential guarantees.

Financial Support for NAP

Despite very limited financial resources, the State has made the decision of giving priority to the national desertification-combating programme. Meanwhile, the Chinese Government warmly invites international contributions to the participation of the implementation of the NAP.

FIJI

Fiji lies in the heart of the Pacific Ocean midway between the equator and the South Pole. It is an enormous archipelago with diverse landscapes and climate. The archipelago comprises over 340 islands and lies between 12° and 22° South and between longitude 175° East and 175° West. The area within these limits exceeds 650,000 km² but this 18,300 km² or less than 3 per cent is dry land.

Although Fiji's climate is described as tropical, it is not uniform across the islands due to the relief of high islands and the impact of the eastern maritime airstream - known as the South East Trades which predominates throughout eight months of the year. Seasonally, climate ranges from hot and dry to warm and wet.

Fiji's main natural resources are land, natural forests and minerals such as gold. Land is the most important natural resource as agriculture currently contributes 25 per cent of the GDP. Fiji has a total land area of 1,838,522 ha with only 594,179 ha or 29.9 per cent of the total land area which could be used

for sustainable agricultural use as no modification is needed before they can be developed fully for some form of agriculture.

The Fiji economy has a very narrow base and performance and is heavily dependent on the success of the tourism and sugar industries. The sugar industry remains the largest contributor to total domestic export earnings, with sugar representing 36.7 per cent in 1996. Exports on traditional commodities such as dalo, kava and coconut oil are also growing due to increasing demand in niche markets. Forestry is also expected to grow and export earnings from this sector are expected to rise to F$100 million by the year 2000. However, agriculture remains the mainstay and the largest sector of Fiji's economy, accounting for almost 43 per cent of foreign exchange earnings. It provides nearly 50 per cent of total employment and contributes 19 per cent of Fiji's GDP.

In Fiji the Government has put in place a number of strategies that are geared towards sustainable development. These include the National Code of Logging and the National Environment Strategy.

From the outset, it must be clearly spelled out that desertification and drought are not perceived to be a priority issue for the Government. However, land degradation has become an environmental problem due to the increase in deforestation, logging, intensive sloping kind cultivation, commercial livestock farming. The consequences of these practices result in a reduction in farm income that in turn leads to increased poverty. As increased land degradation may result in desertification, the reporting done for the national report is done in the context of soil degradation.

In ratifying the UNCCD in 1998, the Fiji Government recognizes that desertification and drought are impending problems that would inevitably occur in the future if no action is taken to address the continuing problem of land degradation in rural areas.

The Ministry of Agriculture, Fisheries and Forests, through its Permanent Secretary, is the focal point for UNCCD activities, while the Land Conservation Board (LCB) has overall responsibility in implementing soil conservation and sustainable land management activities. The Permanent Secretary for Agriculture, Fisheries and Forests is the Chairman of the Land Conservation Board.

The Land Conservation Board (LCB) works closely with the Land Use Section of the Ministry of Agriculture, Fisheries and Forests. The LCB was established under the Land Conservation and Improvement Act of 1953 to exercise general supervision over land and water resources.

Presently, the National Action Plan on Desertification has not been formulated and thus will require technical assistance from the UNCCD secretariat. However, the Ministry of Agriculture, Fisheries and Forests and the Land Conservation Board have put in place mechanisms to implement soil conservation and sustainable land management programmes. These programmes are mostly at the national level and at the subregional level where donor assistance from IBSRAM has been received.

To ensure that all stakeholders are involved in the formulation of soil conservation and sustainable land management programmes, participating rural appraisal technique was used to collate the views of stakeholders and agencies involved in sustainable land management. Brochures and pamphlets were also distributed to farmers' groups and schools.

As part of its ongoing programmes, the Land Conservation Board (LCB) and the Minister of Agriculture, Fisheries and Forests consults widely with other stakeholders as the Fiji Sugar Corporation and Native Land Trust Board in

formulating collaborative activities on land degradation and sustainable land management. Due to a lack of financial resources, these efforts did not materialize. There is a critical need for international partners to participate and fund these activities.

Past experiences have revealed that the lack of political resolve to confront land degradation and sustainable land management issues remains a major problem. There is a general lack of interdepartmental coordination and the Government was too focused on rapid development. In addition, there was a poor awareness in Fiji of the independence of conservation and development and that institutions concerned with conservation and environmental management are weak and insufficient for Fiji's needs.

There are ongoing projects that are undertaken to combat the problem of land degradation. These include the programme on sloping land agriculture, lowland farming system project, vetiver grass hedge row planting and the agroforestry project. It is envisaged that these projects will be adopted into the National Action Plan to combat desertification.

Funding for these projects are provided by the Fiji Government with some support from donor agencies as AUSAID, ISRAM and GTZ. At the same time the Government has identified two new projects that would be implemented to combat soil degradation. However, these projects are depending on donor supports for their implementation.

Reliable information on land resources including soils, climate, vegetation and topography is needed if land conservation policies are to be developed. Some of this data is widely available in Fiji. There are also established monitoring and observation capacities such as the Fiji Land Information Council and the Forest Management Information System.

However, there is a critical need for an information system on land degradation and desertification at natural level.

INDIA

1. At the UNCED in Rio de Janeiro a Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD) was agreed. In December 1992, The General Assembly adopted Resolution 47/188. The objective of the Convention is:

> to combat desertification and mitigate drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.

India ratified the Convention on 17 December 1996 and it came into effect on 17 March 1997.

2. In India about 107.43 m ha, or 32.75 per cent of the total geographical area is affected by various forms and degree of desertification. Particularly the arid, semi-arid and sub-humid regions, commonly called dryland, represent fragile ecosystems that are susceptible to desertification. These regions are also susceptible to frequent droughts that accelerate the process of desertification and exacerbate its impact. It is estimated that droughts occur in one or two out of five years in arid and semi-arid regions. The country is currently passing through a severe drought (called *Trikal*, meaning acute shortage of drinking water, food and fodder) which has affected 12 States - especially Gujrat, Rajasthan, Madhya Pradesh and Andhra Pradesh - close to 100 million people and 3.4 million cattle are caught in the grip of drought. The

general problem of the dryland region with large populations is essentially one of human ecology. On one hand, the inherently limited water resources within the region set the ultimate limit of biomass productivity, on the other hand, erratic rainfall results in widely fluctuating production which, in turn, leads to the shortage of food particularly for the poor, imposing stress on the population. As human and animal population increase, these stresses become greater and the demand on natural resources is magnified and a process of progressive degradation of resources is set into operation.

3. Post independent India has taken a number of steps to tackle the problem of drought and the mitigation of distress caused by it. Systematic efforts through the launching of long-term countermeasures were initiated in the Second Plan (1956-61) which were substantially expanded during the Fourth Plan (1969-1974). However, the Fourth Plan suggested that much of the amount GoI spent on relief in famine-affected areas could be "so deployed in the areas chronically affected by drought as to generate considerable employment in the rural sector largely related to pre-planned programmes of Rural Works." In 1970-71, the Rural Works Programme (RWP), with the objective of creating assets designed to mitigate the severity of drought where it occurred and provide employment in drought-affected areas, was formulated. The mid-term appraisal of the Fourth Plan redesignated RWP as Drought Prone Area Programme (DPAP). In spite of the resource constraint to tackle the magnitude of the problem caused by desertification and drought, GoI continued to lay emphasis on poverty alleviation programmes with a focus on development and management of renewable natural resources. Various sector and cross-sector projects and programmes related to desertification control were launched earlier on and are continuing within the framework of the Ninth Five Year Plan. Different ministries service these programmes. Some of the major ones are: Afforestation Programme, Drought Prone Area Programme (DPAP), Desert Development Programme (DDP), National Watershed Project for Rain-fed Areas (NWDPRA), Indira Gandhi Nahar (Canal) Project, Soil and Water Conservation in the Catchment of River Valley Projects, and Development of Ravine Areas. Also, steps have been taken to augment renewable energy sources by initiating programmes for tapping solar energy, by harnessing wind power and by undertaking plantation programmes with people's participation and encouraging farmers to plant trees on their fields. In addition, the National Project on Biogas Development has been undertaken to promote family type biogas plants by using cow dung. The National Programme of Improved *Chullhas* (stoves) is under implementation to improve energy conservation. In other social and economic areas, ministries such as Human Resource Development, Health, Social Welfare, etc., implement programmes having a bearing on combating desertification. These programmes are implemented on a regular basis to combat desertification.

4. Although the restoration of ecological balance continued to be the main objective of the Drought Prone Area Programme (DPAP) and the Desert Development Programme (DDP), coordination and sustained action on achieving drought-proofing and combating desertification continued to be problem areas. As a result, the direction of the programme became diluted, depending upon various factors, such as the perception of State Governments, capabilities of sectoral departments and pressures exerted by different interest groups. In the process by and large, each activity under the programmes was implemented in an isolated and segmented manner and the watershed unit of area for planning and development was completely lost sight of.

5. When drought problems are faced, Central and State Governments undertake relief measures by providing drinking water and food grains through the Public Distribution System (PDS), fodder and food subsidies to special groups, and employment through food-for-work-programme. At the Centre, the Disaster Management Division in the Ministry of Agriculture coordinates drought relief works with State Governments. The National Centre for Disaster Management (NCDM), set up in 1995, undertakes human resource development, research case studies, the building of a database, and provides information services and

documentation on disaster management. Financial assistance to State Governments is provided from the Calamity Relief Fund (CRF). In the wake of the current drought, GoI has set up a Commission on Disaster Management under the Chairmanship of the Deputy Chairman, Planning Commission, to look into the entire gamut of the problem and make recommendations to streamline the system.

6. In order to provide research support to the various programmes for combating desertification, GoI has established a network of national level research institutes such as the Central Research Institute for Dryland Agriculture, Hyderabad; the Central Arid Zone Research Institute, Jodhpur; the Central Soil Salinity Research Institute, Karnal; the Central Soil and Water Conservation Research Institute, Dehra Dun; the Indian Grassland Forest Research Institute, Jhansi; the National Research Centre on Agroforestry, Jhansi; the Water Technology Centre at the Indian Agriculture Research Institute, New Delhi, under the aegis of the Indian Council of Agricultural Research (ICAR). A network of forestry research institutes under the Indian Council of Forestry Research and Education (ICFRE), Dehra Dun, is conducting research on problems related to the rehabilitation of degraded lands and increasing the productivity of forests of drylands. Besides developing technology packages, these institutes are also engaged in training field staff in different disciplines.

7. The specific schemes and research efforts are well supported by institutional, policy and legislative measures. Environmental management is accepted as a major guiding factor in the national developmental planning process. In June 1972, MoEF, in accordance with the principles 16 and 17 of Agenda 21, adopted the National Conservation Strategy and Policy Statement on Environment and Development which serves as a management guide for integrating environmental concern with development imperatives. In 1993, the draft Environment Action Programme (EAP) document was finalized. The EAP emphasizes, *inter alia*, soil and water conservation and drought proofing and the management of natural disasters. People's participation at the grass-roots, local and regional levels is also accepted as a key issue. EAP is now under comprehensive review both in Government and non-government sectors.

8. A policy framework is already in place. Important among these are: National Land Use Policy Outlines, 1986; Draft National Agriculture Policy, 1999; National Forest Policy, 1988; Draft Grazing and Livestock Policy, 1994; Draft National Policy for Common Property Resource Lands; Draft National Policy and Macro-level Action Strategy on Biodiversity, 1999; and National Policy on Population. A National Policy on Environment is under preparation. However, most of these policies have come into existence in the last few years. These do not discuss desertification per se but have important implications for combating it.

9. On the institutional side, the National Land Use and Wastelands Development Council (NLWC), established in 1985 and chaired by the Prime Minister, is the highest policy planning and coordinating agency for all issues concerning the country's land resources. NLWC oversees the work of the National Land Use and Conservation Board (NLCB), the National Wastelands Development Board (NWDB), and the National Afforestation and Eco-Development Board (NAEB). At the State level, the State Land Use Boards (SLUBs), under the Chairmanship of Chief Minister, are responsible for implementation of related Central/State schemes and programmes. The programmes at the village and block level in the States are coordinated by SLUBs. The ICAR institutes have substantially contributed towards the development of technology, imparting training and setting up demonstration projects for dryland improvement.

10. In so far as the legal and regulatory framework is concerned, Article 48A and 51 G of the Directive Principles of State Policy enjoin upon the State to protect and improve the environment and safeguard the forests and wildlife. The Indian Forest Act 1927, Wildlife (Preservation) Act 1972 and Mines Act 1952, Forest (Conservation) Act 1980 (FCA) and Environment (Protection) Act, 1986,

together have helped in the conservation and management of natural resources and the preservation and protection of the environment. For example, as a result of enforcing the provisions of FCA, the annual rate of diversion of forest lands from 130,000 ha during 1950-1980 declined to 25,000 ha during 1980-95. The last five years witnessed a further reduction in the diversion of forest lands to 15,500 ha. In addition, compensatory plantations have been raised over 530,000 ha in lieu of the diversion of forest lands.

11. Realizing the need of wider participation by local communities in the schemes and projects formulated for natural resource management in general, and for combating desertification and drought in particular, several steps have been initiated in recent years. The Constitution (Seventy-third Amendment) Act, 1992, gives constitutional status to the *Panchyati Raj* Institutions (PRIs) at Village, Block and District levels. Under the amendment a number of subjects, e.g., agriculture, land improvement, implementation of land reforms, land consolidation and soil and water conservation, water management and watershed development, animal husbandry, fuelwood, and fodder, and social forestry have been passed on to PRIs which are village level institutions. This constitutional amendment also promotes gender equality even in the political sphere as it reserves one-third of elected seats for women in all PRIs.

12. Most of the schemes in the area of rural development and natural resource management have been revamped to involve local communities. For example, new guidelines, based on the recommendations of Dr. Hanumantha Rao Committee, have been issued for the implementation of all area development programmes. These guidelines make it mandatory that all such projects be a part of the action plans prepared on a watershed basis and must involve local communities through Watershed Associations. Further, in the forestry sector in pursuance to GoI Circular of 1 June 1990, 22 State Governments have issued their guidelines to involve village communities and NGOs in protection and regeneration of degraded forests on the basis of their taking a share of the usufruct from the forest areas that they protect and develop. As of January 2000, more than 36,075 Village Forest Committees are protecting about 10.25 m ha of degraded forests.

13. These steps signify a major shift in approaches viz., from sectoral to integrated and from governmental to people's programmes. Along with these, emphasis has been laid on incorporating traditional practices, particularly water harvesting in such projects and schemes. In the past, village communities have developed many environmentally-friendly, traditional practices in the field of crop production, mixed farming, water harvesting, forage resource conservation, combined production systems, biodiversity management, forestry, energy and the storage of grains/tubers. While some of these practices have already been incorporated into on-going programmes, efforts would be made to restore them, improve them up with modern approaches and use them in combating desertification. These changes are in harmony with the spirit of CCD.

14. Though the above-mentioned efforts have been significant to an extent in combating desertification and drought and in reducing their impact, much more needs to be done, considering the magnitude of the problem. To rehabilitate the total vulnerable area of about 107.43 mha, a coordinated effort, as well as significantly enhanced budgetary support, would be required. The provisions of CCD and the formulation of the National Action Plan (NAP) would play a major role in providing these.

15. Towards the preparation and implementation of the NAP, the Ministry of Environment and Forests (MoEF) functions as the national focal point for the CCD. It has established a 20 member National Steering Committee (NSC) chaired by the Special Secretary, MoEF. The Committee includes the Secretaries of the Ministries, Directors of Research Institutes, Heads of Departments and NGOs concerned with programmes related to combating desertification. The functions and the mandate of the NSC are: (i) to review national priorities, (ii) to assess the progress of the preparation of the NAP and (iii) to ensure effective

inter-ministerial coordination for the implementation of the NAP. MoEF provides secretarial support and funds required for the efficient functioning of NSC. The NSC constituted four Working Groups (WGs). These are: (1) Desertification, Monitoring and Assessment and Early Warning Systems, (2) Sustainable Land Use Practices for Combating Desertification, (3) Local Area Development Programme (LADPs), and (4) Policy and Institutional Framework. Each WG has its own terms of reference. The WGs will provide inputs for the preparation of the National Action Programme (NAP).

16. The focus of the National Action Programme (NAP) would be in areas which are considered important by CCD (Article 10 of the Convention), but have not been adequately treated in NCS and EPA viz., improving institutional capacity and organization at the grass-root level, promoting alternative livelihoods, etc. Depending upon the evaluation of ongoing strategies and programmes and assessment of current and future needs to combat desertification and mitigate the effects of drought, the NAP would be oriented to give the thrust on meeting community needs of drinking water, food, fodder and fuelwood, with a view to improve their quality of life.

17. Linkage with Regional Action Programme (RAP) has been established by participating in the six Thematic Programme Networks (TPNs) and India is host to the TPN2 "Agroforestry and Soil Conservation in Arid, Semi-arid and Dry Sub-humid Areas". MoEF and ICAR have facilitated establishing and functioning of the TPN2 at the Central Arid Zone Research Institute, Jodhpur, in collaboration with four other main institutions. The Space Application Centre, Ahmedabad, has been identified as the Technical Coordinator for establishing the TPN-1 "Desertification Monitoring and Assessment" network in India.

18. At the UNCED, four important environmental instruments were agreed: The United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (CCD) and the Principles for Global Consensus on the Management, Conservation and Sustainable Development of all types of Forests (Forest Principles). The important element about these instruments is the considerable similarities and complementarities at the scientific level. Indeed, Sustainable Development by definition requires that issues be addressed holistically to ensure that solution to one environmental concern does not introduce another. Therefore, the scientific linkages between the different instruments that exist and their own provisions could provide an avenue for an integrated and cost effective approach in implementing the instruments in future.

19. MoEF has prepared the National Forestry Action Programme (NFAP) for sustainable development of the country's forests as a part of the programme recommended by the United Nations Conference for Environment and Development (UNCED), its subsequent forum, the Commission on Sustainable Development (CSD), and the Intergovernmental Panel on Forestry (IPF) for launch of NFAP globally. The National Policy and Macro-level Action strategy on Biodiversity has been formulated.

20. Even though the concerned ministries and the State Governments have taken measures for local capacity-building, a lot remains to be done, particularly at the grass-roots level. The Central Soil and Water Conservation Research Institute, Dehra Dun, has been serving as a focal institute for watershed management and soil conservation. The Committee on Training in Watershed Development has also envisaged an active role for the National Institute of Rural Development (NIRD) for a massive nationwide human resource development. Training will be given a high priority and this is an area where external assistance would be required.

21. In the country several organizations are engaged in the monitoring of different aspects of desertification and drought. Work is in progress to establish an Early Warning System (EWS) and a drought management plan. In so

far as monitoring and evaluation (M&E) of programmes/projects undertaken within the framework of NAP is concerned, it will be carried out by the Programme Evaluation Organization Wing of the Planning Commission, with the active support of the Environment Information System (ENVIS) in MoEF. The aim should be to eventually develop a user-friendly M&E system, incorporating the relevant indicators, base line data, targets, data source and collection methods, which may finally lead to Community Based Monitoring System (CBMS) at the local level. The criteria for the selection of impact and implementation indicators have been briefly discussed. A logical framework approach for the monitoring and evaluation of each NAP project has been suggested.

22. It is seen from the foregoing discussion that GoI soon after independence launched several programmes to combat desertification and mitigate the effects of drought. Even though the Government has been allocating substantial funds for the programme, these were far short of the funds needed to fully address the enormity of the problem. External assistance is therefore required for mounting a massive programme to fight the menace. As soon as the NAP document is finalized, appropriate programmes/projects identified and prioritized, consultations with multilateral and bilateral agencies and international donors would begin.

23. The report summarizes the thrust areas for action in the future and emphasizes the need for a National Action Programme which will provide an institutional mechanism, both in terms of achieving better coordination among affected states, and the national agencies involved in land management. It will also supplement GoI's resources with external assistance available within the CD framework for a more comprehensive, coordinated and participatory programme of action to combat desertification and mitigate the effects of drought.

INDONESIA

Land degradation in Indonesia has reached an alarming stage, affecting 48.5 million hectares in which 27.8 million hectares are already in a critical condition.

The underlying causes of land degradation in dry areas of Indonesia are rooted in a complexity of social, economic and aggravated by over-exploitation and poor land management.

Various forms of degraded land known widely in Indonesia as critical land related to water scarcity and long drought seasons are widely distributed in several provinces of Indonesia, especially in the provinces of the Eastern part of Indonesia.

Several institutions and agencies are involved in the implementation of land rehabilitation and soil conservation and monitoring of drought in Indonesia. Coordination mechanism in the planning and implementation of land degradation control has been established, particularly by the Directorate General of Land Rehabilitation and Social Forestry, Ministry of Forestry and Estate Crops (MOFEC).

It was agreed during the National Workshop on the Implementation of UN-CCD conducted on 13 June 2000 in Bogor that the National Coordinating Body (NCB) of the UNCCD in Indonesia is the Ministry of Forestry and Estate Crops and the National Focal Points are:

- Director of Land Rehabilitation and Soil Conservation, Director General of Land Rehabilitation and Soil Conservation, MOFEC;

- Director Bureau of Planning and International Cooperation, MOFEC.

The implementation of land rehabilitation is regulated by several laws: Forestry Law, Agrarian Law, Autonomy Law and other related government regulations. Several guidelines and manuals on watershed rehabilitation, soil conservation, land rehabilitation and drought monitoring, ex-mining reclamation, have been formulated by related institutions.

Biophysical, social, economical and cultural constraints have affected the low degree of success in the implementation of critical land rehabilitation in Indonesia. Economic crisis, low level of community participation and lack of coordination among the related institutions are the main burden which need to be solved for better implementation of land rehabilitation in the near future.

Research activities to find adoption technologies for combating degraded lands in dry areas based on local bio-physics, socio-economic and cultural conditions is conducted by the Forestry and Estate Crops Research and Development Agency (FERDA), including research programmes for the management of agroforestry in dry ecosystems and improving land degradation control technology.

Empowerment of local communities and the promotion of traditional knowledge in land rehabilitation control and agroforestry will be the main part of the action program for 1999-2004 in line with the decentralization process of development activities.

Project ideas priority actions were identified by several institutions for the implementation of UNCCD among others are: study on fast growing tree species for land rehabilitation, promotion of animal husbandry for dry region, climatic variability analysis and agroforestry technology development on dry areas of Indonesia.

Indonesia is expecting that its participation in the Convention will improve national and international capacity-building, enhance implementation and experiences exchanges and promote international support for land degradation control and drought impact mitigation in the country.

IRAN (ISLAMIC REPUBLIC OF)

1. The Strategies and Priorities Established within the Framework of Sustainable Development Plans and/or Policies

The Islamic Republic of Iran (I. R. Iran) is situated in South West Asia, bordering the CIS states in the North, Afghanistan and Pakistan to the East, Iraq and Turkey to the West and the Persian Gulf to the South. The country occupies a total land area of nearly 1,650,000 square kilometres and is the second largest country in the Middle East.

Most of the country is covered by arid and semi-arid lands in which the average annual rainfall is less than 250 mm, which is scattered irregularly both in terms of time and area and potential for evapotranspiration is many times more than precipitation. It amounts to more than 100 times in certain regions in the country. The net result is a lack of opportunity for the vegetation to develop and a decrease in the biological productivity of agricultural lands and natural vegetation. Desertification and drought adversely affects about half of the country's population.

The country's population is about 63 million with an annual average growth rate of about 1.4 per annum. More than 38.7 of the population lives in rural areas where farming and animal herding is the major source of income. Beside the high human population, there is also a large number of livestock which dependent on the land. The pressure on the land has resulted in the increase in utilization of marginal areas for both cropping and grazing. This situation,

coupled with natural erodibility of the land and erosive nature of the rainfall in drylands which comes as flash floods, has caused severe soil erosion and general land degradation.

Many geographers and ecologists consider the central plateau of Iran as one of the world's most famous and unique deserts, and the Lut desert, located in the South-Eastern part of the plateau, is the most arid and the hottest point on earth.

The particular climatic conditions of Iran contributed, in addition to the formation of more than 3000 years of indigenous knowledge. Furthermore, institutional frameworks have been created and concerted efforts undertaken during the last forty years. On that basis, a broad range of strategies has been developed and programmes implemented to address the many problems associated with desertification and drought before the advent of the CCD. As a result, 3,000,000 hectares of degraded lands have been rehabilitated. In addition, the regular 5-year Economic, Social and Cultural Development Plans (the third plan under implementation) have paid particular attention to soil, water sustainable management of rangelands and forests. Iran has already been involved in sharing its long experience and expertise in the fields of combating desertification and sand dune fixation with other countries.

The Government of Iran is committed to the concept of sustainable development through linking the environment to the overall development process. Since UNCED, the Government has launched various initiatives to promote and support the implementation of Agenda 21 and sustainable development. Among these are the efforts to coordinate all environmental activities in the country by the High-Council on Environment and the formulation of a National Action Plan for the Environment (NEAP) which is now in place. Within this context, there is consensus within the Government that land degradation is a priority environmental problem in the country and that CCD offers a timely and strategic framework within which these issues could be addressed.

In line with its obligations under the convention and as a national priority, the Government has already launched the elaboration of the National Action Programme (NAP) to combat desertification. The Government has adopted the framework and guidelines of the NAP. The formulation of NAP will supplement the past and existing initiatives in combating desertification in the country.

2. The institutional measures taken to implement the CCD

I.R. Iran is one of the first countries that signed the International Convention to Combat Desertification and has completed the ratification process in 1996 and thus became a member of the Convention. Among measures taken by the Government are putting in place an institutional structure, as well as formation of thematic working groups to get the participatory process of NAP formulation under way. To spearhead this effort, a National Committee to Combat Desertification (NCCD) (National Coordination Body-NCB) has been established under the overall coordination of the Minister of Jahad-e-Sazandegi, (Rural Developmen.. , who acts as the chairman of the Committee. The NCB comprises various relevant ministries, institutions, academia, local communities and NGOs and international organizations representatives. The NCB continues its efforts towards the elaboration of the NAP, in close cooperation with the National Committee for Sustainable Development (NCSD).

An Executive Committee (EC) already exists and is composed by all relevant technical institutions: researchers and technicians, as well as well known institutions. The objective of the EC is to provide advice and guidance to the steering committee for all technical and substantive matters related to desertification. The NSC is composed by the existing National Committee and broadened to Representatives of all concerned Ministries, NGOs, Women Groups, Local Municipalities, and the private sector. Also, this process is being

backstopped by UNDP as well as ESCAP through the DESCONAP Programme Office (DPO) located in Tehran.

The intersectoral and multidisciplinary character of the NCB is manifested in the National Steering Committee (NSC). The NSC includes relevant ministries, institutions, academia, local communities and NGOs. The Forest and Rangeland Organization (FRO) has been designated as the focal point for implementing the NAP activities. FRO provides the NCB with necessary requirements such as communication and transport facilities for stakeholder coordination, office space, etc.

The National Focal point (NFP) for CCD has been designated by FRO who is accountable to the NSC and supported by a full-time secretariat.

At the local level, regional centers for planning and implementing the Convention to Combat Desertification and sand dune fixation programmes and projects, have been constituted by FRO in 12 provinces of the country, representing more than 60 per cent of the country's total area. These centers coordinate the activities in each region, in close cooperation and collaboration with the Islamic villages and cities councils (elected directly by the people) and the other relevant governmental and non-governmental organizations in each province.

Women have always played a major role in combating desertification efforts in the country. However, promotion of the role of women at all levels, including at policy and decision-making levels, is being paid particular attention.

The UNCCD principles and the NAP guidelines based on past experiences have already been integrated into the national 5-year development plan under implementation.

At the regional level, the ESCAP DESCONAP Programme Office (DPO) located in Tehran, continues to play its role in the region through holding seminars, workshops, training courses, exchange of information and experiences.

The International Experts Group Meeting on the Preparation of the RAP for Combating Desertification and Drought in Asia was held in Bangkok, Thailand from 10 to 13 November 1998. The Meeting decided that the first stage of the implementation of the RAP should include the development of three specific Thematic programmes Network (TPNs) and adopted their Terms of Reference (ToR). These include the TPN on Rangeland Management, including Fixation of Sand Dunes, to be hosted by Iran. The Network is scheduled for launching in 2000.

Environmental laws and regulations are also important elements in the management of environmental affairs, and these have been evolving rapidly in Iran since 1971. Although the Environmental Protection Act was ratified in 1974 and enacted the following year, since the victory of the Islamic Revolution greater importance has been accorded to environmental laws and regulation; indeed, I. R. Iran is one of the few countries in the world which has a special article in its constitution on environmental protection.

Article 50 of the constitution states that is a public duty to protect the environment in order to assure the well-being of present and future generations. Accordingly, all activities that pollute or irreparably damage the environment are prohibited.

The "Development of a Green Economy" initiative announced by the I. R. Iran in 1990 illustrates the link that environmental legislation makes between the environment and the economy. The First, Second and Third Development Plans also took this integrated approach. Legislation on environmental impact assessment has also been formulated and also the Decision 138 (1995) of the High

Council for the Environment requires an "environmental assessment report" on all major development projects to be submitted before they are implemented.

Existing regulations on air, water and noise pollution and waste and sewage disposal have contributed to the creation of a body of legislation for managing the human environment. However, there is still a critical need for additional legislation.

The development and implementation of the National Programme of Action for Environmental Protection reflects the importance accorded to environmental issues in I. R. Iran. The National Committee for Sustainable Development (NCSD), which comprises eight subcommittees including the subcommittee on combating desertification, is the lead institution in environmental strategy and policy development. At the same time, the decisions of the National Committee on Combating Desertification (NCCD) under the chairmanship of the Minister of Jihad-e-Sazandegi (rural development) are considered as obligatory to all institutional members of the Committee. FRO is also a member of the High Council of the Environment under the auspices of the President of the Islamic Republic of Iran.

Based on Articles 45 and 50 of the National Constitution, the regular five-year development plans, adopted by the National Parliament, also take fully into account the principles of CCD and the experiences of the past. Sectoral laws governing the management of natural resources include the following: land tenure, forest act, wildlife act, and water act also exist. These laws are regularly reviewed based on the experiences gained from their implementation.

3. Participatory process in support of the preparation and implementation of the NAP

CCD calls for developing a strategy for concerted efforts and effective participation of key actors involved in defining NAP process and priorities. Some of the policies and activities undertaken by the Government to promote the participatory approach in combating desertification efforts include:

- Enactment of laws for encouraging the local communities and CBOs to exploit natural resources in the rangelands in a sustainable manner in accordance with CCD principle and the objectives of sustainable development. In this connection, the ownership of lands has been left to local communities, including farmers and pastoralists, aiming at reclaiming the degraded lands and exploitation of natural resources based on scientific principles. For this purpose, the necessary training and information are provided to local people;

- Education and extension activities at the local level in order to encourage and promote public participation and awareness raising in the methods for the protection of land resources and the control of land degradation;

- Assisting and encouraging the formation of school students groups (Pooyandegan), as well as other youth, women, students, farmers and pastoralists groups;

- Enactment of laws aimed at reducing state intervention and instead, increasing the public role in combating desertification efforts;

- meeting of NGOs and CBOs was helped by the FRO. The objective of the meeting was to identify how better NGOs and CBOs active in combating desertification activities can be involved in the preparation and implementation of the NAP;

- seminar on Women and Desertification was organized in June 1999 by NGOs which was supported by the CCD secretariat. UNSO, UNDP and Iranian FRO provided the necessary facilities;

- meeting with community elders has been organized by NFP in order to remind the indigenous knowledge and technologies. An inventory of such technologies and knowledge has been prepared and reported to COP 1 of CCD and reflected in CCD reports to COPs of the Convention;

- project document on the Development of the National Action Programme has been prepared with UNDP assistance.

At the end of which, the following are but some of the results relating to public participation expected to be realized:

- awareness of public raised and decision-makers sensitized on desertification issues including local populations;

- effective participation of all stakeholders at all levels;

- role of women strengthened in the implementation of the CCD;

- The coordinating unit, Executive committee and representatives of civil society trained;

- Two subregional seminars and workshops on NAP development and new technologies for combating desertification were organized by DPO in which countries from South and Central Asia, Western Europe as well as the CCD secretariat, United Nations organizations and a large number of Iranian NGOs, CBOs and academia actively participated;

- GEF project entitled "Carbon Sequestration in the Desertified Rangelands of Hossein Abad, South Khorasan, through Community-based Management" is under implementation. The results of this project are also supposed to be used while formulating the NAP in terms of the involvement of local people;

- Upon a contract, the draft Terms of Reference of TPN3 to be hosted by Iran, was prepared by an Iranian NGO;

- The NAP guidelines adopted by the Government emphasizes public awareness at all levels of society and women and public participation, in the decision, natural resources and combating desertification.

Although NGOs concerned with environmental issues are not yet sufficiently developed in Iran, there are signs that they are on the increase. According to the information provided by the Department of the Environment, there are currently 170 environmental NGOs active throughout the country. These groups have been engaged primarily in educational and publicity activities and the implementation of some projects on the ground. An inventory of NGOs and CBOs has been prepared by the Department of the Environment. Also, a network of environmental NGOs has been created by the Department.

4. Consultative process in support of the preparation and implementation of the NAP and the partnership agreement with the developed country partners and other interested entities

Iran did not receive significant support and active participation by international partners in the preparation and implementation of the NAP. The GEF project on carbon sequestration, UNDP involvement in all the stages of NAP process, consultations with UNSO, CCD Global Mechanism (GM), IFAD and FAO are some of the efforts to involve the donor community, while Iran did not receive

any support from bilateral donors. However, technical and financial support for finalizing the NAP formulation process is the principal need at this stage.

Due to the vitality of the issue for Iran as one of the most affected countries by desertification and drought, significant amounts of resources have already been devoted to the preparation of NAP and the implementation of combating desertification projects. It is noteworthy to mention that recently a contract has been signed between the FRO, NGOs and University of Tehran for consolidating the scientific approach in the NAP. As a result, national resource mobilization is the main financial support for the NAP process. Therefore, there is an urgent need for the donor community to realize the objectives of the Convention through the provision of new and additional funding and mobilizing and channelling the existing resources in support of the most affected regions and countries.

A regional symposium on sustainable development of drylands will be held in the province of Yazd in central Iran with the financial and technical support of UNDP. Representatives from India, China, Pakistan, Central Asian Republics, relevant international organizations, as well as, NGOs, CBOs, and women and youth organizations are invited to participate in the Symposium. The outcome would not only contribute to the NAP process in Iran but would also provide a good opportunity for sharing information and experiences with other countries. A new Regional Center on Sustainable Development of Desert Communities is supposed to be established in Yazd. It is also expected that the Symposium would play its role in the mobilization of resources from foreign sources.

5. Measures taken or planned within the framework of the NAP, including measures to improve the economic environment, to conserve natural resources, to improve institutional organization, to improve knowledge of desertification and to monitor and assess the effects of drought

Desertification and drought affects the daily lives of a large proportion of Iranian society. Therefore, the NAP should address economic, social, cultural, and environmental aspects of the issue. Based on the long experiences gained during four decades of combating desertification activities, and the diagnoses and evaluation of these activities and review of the past experiences in Iran, appropriate actions are envisaged in the NAP process. These include, among others, at the macro-level, the following:

- integration of environmental considerations in general and combating desertification in particular, into the policies and activities of all relevant national ministries and local institutions;

- emphasizing on population control policies and family planning, especially in rural areas, in accordance with Islamic values;

- according priority to the sustainable land management and institutional coordination for preventing land degradation, as well as desertification control;

- promotion of the use of new technologies and techniques relating to combating desertification and better use of indigenous knowledge and technologies;

- enactment of necessary laws and amending the existing rules and regulations in conformity with sustainable development policies and programmes, including combating desertification;

- public awareness at all levels of society;

- public participation, including NGOs, CBOs, local people, private sector,

youth and women, in the decision-making, management and the implementation of the NAP and of projects on natural resources and environment in general and, on water, soil and agriculture in particular;

- revitalization of and upgrading the research centers;

- capacity-building, at various levels.

The Forest and Rangeland Organization (FRO) is an important organization with branches in all provinces of the country. This organization, with 40 years history in combating desertification efforts, is in charge with the development of policies and projects on combating desertification and sand dune fixation, as well as sustainable management of forests, reforestation and afforestation activities. Significant amounts of resources are provided to this organization upon its programmes and activities. Policies, activities and institutional framework of FRO are under regular review based on the gained experiences. Several joint projects on sand dune fixation and combating desertification have been defined and/or implemented by FRO in neighboring and other countries.

Today, several research institutes and faculties on combating desertification exist around the country. One of the objectives of the NAP is to strengthen and improve the work of these institutions. The integration of the results of several ongoing projects, including "the GEF carbon sequestration based on community management", are proposed to be integrated into the NAP.

The FRO branches play an important role to facilitate liaison between local and national level through coordination and cooperation with the Islamic Cities and Villages Councils (elected directly by the people), as well as the governors and mayors. This is how the community initiatives are reflected in the policies and strategies at the macro level and into the day-to-day programmes for combating desertification. However, there is still a lack of effective management and lobbying capacities in CBOs and especially with women-folk. Therefore, one of the NAP priorities would be to enhance the effective participation of NGOs/CBOs and affected grass-roots communities. Training is also an important part of this endeavor which has already shown remarkable results.

Drought is also one of the major threats to the Iranian society. In the current year, drought had already unprecedented and devastating effects on 15 provinces in the country, comprising about 30 per cent of the population. A remarkable disaster response mechanism exists in the country, including a special committee on natural disasters of the Ministry of Interior, the existing mechanisms in the Red Crescent Society of the Islamic Republic of Iran, as well as the Ministry of Jihad-e-Sazandegi (rural development) and the FRO. Iran's experience and expertise in this field is also known by other countries and the relevant international organizations. As far the activities for mitigating the effects of drought is concerned, no foreign assistance has been recorded yet.

6. Financial allocations from national budgets in support of the implementation as well as financial assistance and technical cooperation received and needed, identifying and prioritizing requirements

The constant and twin problems of desertification and drought heavily influenced the development planning in Iran over the last decades. The national budget allocated for these activities during the Second Five-Year Development Plan (1995-1999) was 153,469,000,000 Rials ($51,000,000). At the same time, the private sector and local communities have invested an additional amount of 15,000,000,000 Rials ($5,000,000). In addition to the environmental and social aspects, the protection of cities, towns and villages, as well as the industrial complexes, roads and railroads networks and ... towards the moving sand dunes has always imposed considerable pressure on the national budget. This is while

several Ministries and institutions undertake activities in line with anti-desertification campaign which is in fact coordinated under the national development plans.

The bulk of resources for the NAP process in Iran is being provided by the Government. However, due to the magnitude of the problem and limited resources, chances for the NAP success depends to a large extent on donor support.

Financial resources, technical and technological support, access to know how and exchange of experiences and expertise are challenges facing successful NAP process. Iran, while being in need of this shopping list, is also prepared to share its experiences with other countries through organizing training courses for experts from affected countries, development and implementation of joint projects, study tours, etc.

7. Review of the benchmarks and indicators utilized to measure progress and assessment thereof

The National Plan of Action for the Protection of Environment prepared by the Department for the Environment analyzes the current environment situation in Iran. In accordance with the sustainability indicators in water, soil, climate, flora and fauna and through a comparative study, the state of Iran's natural environment and natural resources is defined.

These data are accessible to interested people and organizations but scattered in several organizations. Furthermore, the indicators and standards used are not similar. Recently, the research and study units have endeavored to update this data and make it available through modern software systems. In general, there exists a considerable volume of data relating to the environment and natural resources, but the challenge is how to collect and upgrade the data and how to facilitate rapid access by all interested parties.

During the last few years, efforts have been made in order to harmonize benchmarks and indicators for measuring progress in combating desertification and the assessment models needed. Currently, the Center for Research on Drylands is undertaking case studies in various regions in the country to assess the last thirty years of the desertification process and combating desertification in Iran. Also, the faculty of social sciences of the University of Tehran implemented a project on comprehensive assessment of improving methods in rangeland management in arid and semi-arid areas.

The results of these assessment studies contribute to the regular review of policies and strategies and their promotion and updating and therefore, more qualified programmes and their successful implementation.

JORDAN

Jordan is a country where arid climate and fragile ecological systems are predominant. The country suffered drastically from a sudden increase of population due to political conditions that prevailed during the second half of the past century. These conditions have had detrimental effects on natural resources and the environment. Due to various factors most parts of the country is subjected to desertification in one form or another.

Being aware of the dangers and threats of the phenomenon, the Government has initiated several actions to streamline its policies and strategies with the objectives and principles of sustainable development and combating desertification.

The National efforts to control degradation, although not in the context of recent definition of desertification, had started before independence and continued in various forms by different institutions, both public and NGOs.

Development plans paid considerable attention to environmental issues. However, the most recent plans placed more emphasis on desertification compared to earlier ones. The Third Five-Year Development plan emphasized the need to protect the agricultural environment from desertification so that the area of arable land is maintained and the soil is protected from various degradation processes. The plan advocated the adoption and encouragement of popular participation in all phases of development projects and programmes.

Jordan has prepared both a National Environmental Strategy (NES) in 1991 and a National Environmental Action Program (NEAP) in 1996. NES aims to maintain long-term environmental balance and enhances the preparation of development plans, while ensuring its continuity through economical planning. NES prioritized the areas to be addressed to ensure sustainable productivity of agricultural land, while protecting the environment.

NEAP aims to guide government environmental policy and investment decisions and to articulate programmes to implement such decisions.

A country study on biodiversity was prepared and efforts are underway to produce a biodiversity strategy and action plan. Equally, a National Agenda 21 is being finalized which includes a comprehensive chapter on desertification, its causes, actions to be taken, and proposed projects that would address these threats.

Jordan has prepared an Agricultural Policy Charter (APC) with the objective of management and utilization of available agricultural production factors in an economically efficient manner while ensuring sustainability. APC stressed the need to tackle various factors hindering the application of effective production practices. In dryland farming areas, sufficient consideration is given to important practices and issues as water harvesting, combating desertification, genetic resources conservation and preparation of legislation pertinent to desertification. APC also outlined proposed measures to conserve and sustainably utilize low rainfall areas, forests and irrigated areas.

Jordan had also prepared a strategy for the utilization of water resources, which prioritizes the allocation of water resources between different sectors. The Government also prepared several policies regarding the uses of different types of water. Special attention was given to efficiency, optimal utilization, resource protection, and participation by the private sector in their management.

Following the adoption of the UNCCD, the Ministry of Agriculture, with the assistance of ESCWA, UNEP and FAO, prepared a National Action plan to Combat Desertification with six programme areas. These programme areas streamline with the principles of UNCCD such as the participatory approach, poverty alleviation, empowerment of local community and efficient resources conservation and management, recommend the establishment of National Coordinating Body (NCB) to catalyze preparation, coordination and implementation of the National Action Programme. It advocated joint efforts and coordinated activities, at the subregional and regional levels, with respect to combating desertification.

National institutions also had taken major steps towards protection and conservation of resources. These efforts are reflected by the establishment of research plans and departments in public universities, with appropriate teaching and research agenda and advanced techniques to meet the nation's concerns regarding environmental degradation and conservation of its resources. The

increase of NGOs directly involved in combating desertification and control of environmental degradation also supported national efforts.

The environment is managed by two institutions as the main focal points, which coordinate the efforts of several public and semi-public institutions. The two institutions are: the Higher Council for Environment Protection (HCEP) and the General Corporation for Environment Protection, (GCEP). HCEP as an autonomous body, has a wide range of responsibilities. With respect to soil resources, its duty is to supervise and monitor sources of pollution as well as soil erosion and desertification, in order to undertake necessary rectifying actions. GCEP has an Environmental Protection Fund that can be invested in different aspects of environmental conservation and management. It has a number of relevant specialized committees, one of which is the National Committee on Desertification.

GCEP is the lead national institution with respect to UNCCD and is concurrently acting as the NCB. The core of the work on desertification and recurrent activities are handled by the Nature Conservation and Land Protection Directorate (NCLP). Within this Directorate, the Division of Land Protection (LP) shoulders most of the responsibilities pertinent to desertification. LP is giving priority to the collection and consolidation of national experience for combating desertification.

The National Committee for Combating Desertification has determined areas for action. However, its work plan is constrained by the limited financial resources and trained human resources. LP has limited staff, facilities, and funds and would greatly benefit from assistance to upgrade its present status and improve performance.

NCB has limited information system capacities and no database on desertification exists. Several national institutions have relevant databases, which can form the starting point for the establishment of a national database on desertification.

The Kingdom has a number of well-organized NGOs actively involved in programmes and activities dealing with the environment, nature conservation, and combating desertification. Their activities are well focused, but suffer from the lack of adequate funds.

Jordan issued several laws directly addressing environmental issues (Environmental Law No 12) and agricultural law addressing resources and their protection (Agricultural Law No 20, year 2000). In addition, several strategies including the strategy for the protection of environment, Water strategy, Agricultural Policy Charter, different water policies, Action plans for Combating Desertification, Action Environmental Plan, Agenda 21 Action plan (under production) and Action Plan to Conserve Biodiversity (under preparation).

Efforts to conserve and combat desertification are assumed by the Ministry of Agriculture, GCEP, and other government institutions through raising awareness initiatives and promoting public participation. In addition to the vital role undertaken by NGOs who are taking the lead in this respect, environmental education is gaining momentum through efforts of the Ministry of Education, the media, and universities all of which produce special documentary programmes.

Regional and international organization and developed countries have provided technical and financial assistance towards resources conservation and combating desertification. Coordination of international efforts is carried out through the Ministry of Planning, while the coordination of national efforts is carried out through GCEP. Both international and national coordination mechanisms need further improvement and enhancement.

Several relevant projects are either ongoing, or have been implemented. However, a comprehensive review of these projects to assess integration and harmonization efforts and relevance to UNCCD has not been done. The Government also has not determined specific mechanisms to ensure funding and resource mobilization strategies for future projects and programmes that can be generated by reformulation of NAP.

Also, formulation of practical indicators to monitor the implementation of the UNCCD has not been initiated. However, the scene is rich with relevant issues, strategies, policies, country studies, action plans, including Agenda 21, executions of a wide range of projects covering different aspects of desertification in particular and environmental protection and resource management in general. In addition, institutional capacity-building can be employed to achieve this goal.

KAZAKHSTAN

The Republic of Kazakhstan is a large Eurasian country. Its area is 2.7 million square km. Almost all types of the world landscapes are represented in this vast territory - from dry subtropics and hot deserts to high mountain tundras and glaciers.

The main specific features of the natural conditions of Kazakhstan are its intracontinental location in the centre of Asia, distinctly continental, arid climate on the significant part of its territory and predominance of plain landscapes. About 45.5 per cent of the Kazakhstan area is occupied by steppes, 50 per cent - by deserts, the ecosystems of which are highly vulnerable to the anthropogeneous impact, and easily destabilized with low self-restorability.

For many decades the Kazakhstan economy was developed extensively without consideration of environmental consequences of such policy. This led to large-scale, deep damage of ecosystems, desertification, loss of biodiversity and caused critical social and environmental situations in many regions of the country. The total area of desertificated lands in the Republic of Kazakhstan is about 179.9 million hectares or 66 per cent of its territory. Desertification processes have covered many regions. Kazakhstan faces a very urgent necessity to prevent further degradation of the natural environment and to take specific measures on the rehabilitation of degraded natural ecosystems, creation of normal human environment. Hence, the Republic of Kazakhstan signed in 1996 and ratified on 7 July 1997 the United Nations Convention to Combat Desertification, thus committing itself to follow it.

In 1997, by assignment of the Government, the National Action Program to Combat Desertification was worked out by a group of scientists with the wide involvement of the public and with financial assistance of UNDP and UNEP. In 1999 Kazakhstan started to develop the National Strategy and Action Plan to Combat Desertification (NSAPCD). It shall be mentioned that the national strategic directions of combating desertification were developed as an integral part of the wider national policy on environmental and food safety, sustainable development of the country, outlined by the President of the Republic of Kazakhstan N. Nazarbayev (1998) in the "Kazakhstan-2030" Strategy (1998).

The main strategic aim of the state policy of the Republic of Kazakhstan on combating desertification is to prevent further degradation of natural ecosystems, stage-by-stage restoration of the natural potential of the desertificated territories, to provide favorable human environment on the base of optimal development of industry, wise use and protection of natural resources and the conservation of biodiversity. To achieve these objectives there will be created a system of efficient management of nature use, founded on environmental restrictions, based on environmental zoning of the territory of the Republic.

The basis of environmental zoning will be an ecosystem principle, consideration of the present-day situation and definition of ecosystem potential capabilities - ecological region capacity. Nature use planning and a system of natural environmental protection, the crucial element of which is the Territorial comprehensive nature protection scheme, are built on the evaluation of the environmental situation, made in the process of environmental zoning. The scheme on the base of environmental zoning on the national and oblast levels elaborates the trends of the economy development of a given region as well as outlines the ways of stabilization (or improvement) of the environmental situation. The Territorial comprehensive nature protection scheme is considered to be a starting point for completion of economic development programmes and includes activities to combat desertification.

To implement efficiently a policy on combating desertification, the NSAPCD envisages the creation and introduction of a consistent system of nature protection legislation, complying with the current requirements of legal, financial and economic basis for nature use.

In the course of achieving the purposes of environmental policy, it is envisaged to widely use economic mechanism of nature use, based on the principle of prevention of damaging the natural environment, ensuring sustainable development. This will allow to ensure harmonic combination of the problems of the environment and economy in the sustainable development of the society. All economic plans of the development of the Republic of Kazakhstan, which include agro-industrial complex, mining, placement of enterprises, populated areas, communications, etc., shall take into consideration environment protection from desertification and improvement of the environmental situation.

The main guidelines of the NSAPCD are: radical improvement of the management of nature use and all natural resources, prevention of degradation of ecosystems, and the conservation of soil fertility.

The following strategic targets are envisaged to prevent degradation of ecosystems:

- rational territory arrangement, ensuring environmentally and economically reasonable location of lands and their internal layout;

- land protection from water and wind erosion, mud slides, flooding, swamping, secondary salinization, drying up, surface sealing, pollution by industrial wastes, chemical substances, forest protection from fires and other degradation processes;

- restoration and increase of fertility of arable lands, productivity of hay fields and pastures;

- re-cultivation of lands damaged in the result of economic activity and their re-introduction to the secondary economic rotation;

- rational use of water resources, wide use of water-saving technology in all sectors of industry, agriculture, and the municipal economy.

The following strategic targets are envisaged to ensure the conservation and balanced use of biodiversity:

- full recording of biodiversity and evaluation of its state;

- monitoring of the state of the components of biological and landscape diversity;

- expansion of the network of specially protected territories;

- definition of periods of raw material procurement from natural vegetation lands, avoiding damage to their composition and structure;

- rehabilitation and restoration of degraded ecosystems;

- conservation ex situ of the wild species of the cultivated plants in the regions of their origin;

- conservation of the genetic fund of local breeds of agricultural animals;

- conservation of the genetic fund of local ancient varieties of farm crops;

- creation of the bank of germinal plasma of rare and endangered species.

The specific action plan to combat desertification has been developed on the base of strategic targets, which will be implemented first of all through the elimination of the main reasons causing desertification, the definition of measures to prevent and eliminate these factors. The national plan will be supplemented by subregional and regional action plans, especially in cases related to the use of transboundary resources, such as lakes and rivers.

The required activities on combating desertification have been divided by terms of implementation to: short-term - 1st stage, mid-term - 2nd stage and long-term - 3rd stage. Long-term activities include measures, which can start at any stage, but will be continued for many years.

Short-term activities include:

- improvement of the system of nature use management;

- inventory analysis of land degradation: arable lands, pastures, hay fields, forests;

- development of the normative and legal grounds of the use of land resources on the base of environmental zoning;

- development of measures of the rational forest utilization, afforestation, improvement of forest protection;

- completion of schemes of development and location as well as creation of a network of specially protected natural territories;

- development of mechanisms of economic incentives for activities on combating desertification and balanced use of natural resources.

Mid-term activities include:

- setting of desertification monitoring;

- development of measures on farming adjustment to climate change and droughts;

- improvement and wide use of soil protection technology of cultivation of farm crops;

- rational use of natural fodder supply lands, creation of seeded pastures and hay fields on the degraded lands;
- rehabilitation of the vegetative cover on long-fallow lands, withdrawn from the lands of agricultural rotation.

Long-term activities include:

- forest and pasture amelioration on desertificated lands; fixing of moving sands to protect pastures, populated areas and economic works;

- amelioration of the lands, affected by secondary salinization, in the zone of irrigated land farming;

- mountain technique and phytomelioration re-cultivation of lands, affected by technogenic damage;

- organization of environmental education and increase of public awareness of desertification problems;

- development of traditional industries, handicrafts, sectors of agriculture.

A number of measures has been taken in the Republic to implement the National plan to combat desertification and drought consequences.

1. **Measures on improvement of the regional nature use management:**

By the Government Resolution #1693 of 12 November 1999, it has been decided:

- To create the following agencies of the Ministry of natural resources and environment protection of the Republic of Kazakhstan in the organizational and legal form of state institutions: committee of forestry, fishery and hunting; committee on water resources; environment committee; committee on geology and subsoil;

- The following departments have been created within the same Ministry: on analysis and planning, of the main state inspection, finance management, on state environmental expertise;

- These Government decisions have allowed to eliminate lack of coordination between the nature protection organizations and to concentrate control over use and protection of natural resources in one agency - Ministry of natural resources and environment protection.

2. **Measures on improvement of the economic situation:**

- Economic mechanism of nature use has been introduced, promoting the prevention of damaging the natural environment, stimulating the rational nature use and creation of additional source of financing of nature protection activities;

- Payments for use of natural resources have been introduced;

- Payments for environment pollution have been set;

- The republican fund of environment protection has been created; regional nature protection funds have been established in all regions and large cities. They allocate funds, and on a tender basis, implement activities on the conservation of natural objects, on the prevention of environment degradation, planting of greenery, re-cultivation of lands affected by technogenic damage.

3. **Measures on conservation of natural resources:**

- New edition of the 1st volume of the Kazakhstan Red Book was published (vertebrate animals), the 2nd volume of the Kazakhstan Red Book (invertebrate

animals) and the 3rd volume of the Kazakhstan Red Book (plants) have been prepared, the 4th volume of the Kazakhstan Red Book (Green book - plant communities) is under completion;

- Bank of germinal plasma of rare and endangered species of plants of Kazakhstan has been created - collection of varieties, lines of farm plants, herds of breeds of domestic animals; museum of valuable microorganisms for industrial and medicine purposes was founded;

- New botanical garden of the Turkish Kazakh University named after Akhmed Yassaui was created on the highly desertificated area of the foothills of Syrdaria Karatau on area of about 100 hectares. Presently in the garden there is a genetic fund of fruit, soft fruit, ornamental plants; about 2,000 species, varieties and forms in total;

- Activities have been started on the rehabilitation of forest ecosystems affected by anthropogeneous desertification. The Project on "Conservation and rehabilitation of the wild apple orchards of the foothills of Trans-Ili Alatau mountains" has been developed and works are being carried out, not only on the restoration of the degraded wild fruit apple orchards, but also on the production of the valuable medical and food product - apple vinegar; "Mashatau" project has been developed and already on the area of 3 hectares, 300 seedlings of the Sieversia apple tree have been planted, and in the village of Jabagaly (Tulkubas district of the South-Kazakhstan oblast) a nursery was created, about 20 species of endangered plants where planted, which will be reintroduced in the place of their natural growth to rehabilitate the damaged ecosystems;

- During the period after adoption of the Convention to Combat Desertification, forest rehabilitation activities were carried out in Kazakhstan on the area of over 322,000 hectares, of which on over 208,000 hectares - through seeding and planting. Protection plantings were created on the area of about 25,000 hectares of which on 10,000 hectares pasture protection plantings were created on sands, ravines and on other inconvenient lands. Activities on the planting of greenery in cities and populated areas were widely carried out. Annually over 10,000 trees are planted in each city. NGOs are involved in this work as well. "Tabigat" NGO alone in 1999-2000 planted 7,000 to 8,000 trees in the environs of Almaty city;

- In the steppe and dry steppe regions of Kazakhstan they widely use: soil protection rotation of crops with strip location on light soils of grain crops, fallow and perennial grasses; flat-cutting soil treatment, ensuring preservation of the stubble to protect soils from deflation and to accumulate winter precipitation to combat droughts; system of fodders and means of plant protection to increase soil fertility and to combat weeds;

- Forest amelioration works have been planned in the zone of ecological disaster in the Aral Sea region on the territory of the dried bottom on the area of 652,000 hectares, of which 17,000 hectares have already been planted with forest plantings. At the present time a project "Pastures ecosystems management in Aral Sea region" is being implemented under support of the UNSO;

- "Scheme of development and location of objects of the nature preserve fund of Kazakhstan for the period till year 2005" has been developed. Only in 1996 there were organized: one preserve -"Kokshetau" and two national parks - "Altyn Emel" and "Ili-Alatau";
- Project proposal on the creation of two preserve water swamplands in the delta of the Ural river and Alakol depression has been prepared. Scientific justification has been worked out, GEF has funded development of the B-status project;

- Project proposal on "Sustainable conservation of mountain agrobiodiversity of Kazakhstan" has been developed. Expert group has been formed, which has

developed scientific justification of conservation of agrobiodiversity of Trans-Ili and Djungar Alatau mountain systems. The Technical Council of the Ministry of Natural Resources and Environment Protection has considered and approved an intermediary version of the project proposal. The Canadian International Development Agency (CIDA) has contributed $7.5 thousand to draw up and develop the B-status project. Estimated project cost is US$ 133,000;

- Transboundary project proposal on "Conservation of the Western Tien-Shan biodiversity" has been developed with the participation of the Republic of Kazakhstan, Uzbekistan and Kyrgyzstan. The grant agreement is planned to be signed in the USA. The Forestry committee has completed draft Government Decision on creation of the Project Supervisory commission;

- The following sub-law acts have been drafted in the Ministry of Natural Resources and Environment Protection: Concept and program of monitoring of environment and natural resources, Regulation on structure, content and procedure for state monitoring of environment and natural resources. Draft Law and draft regulation have been developed and signed on procedure for recording, processing and dissemination of information on environment protection in the Republic of Kazakhstan;

- Kazakhstan has developed the National Environmental Action Program for Sustainable Development (NEAPSD), as the most effective approach to solving ecological problems. The basic provisions of NEAPSD are included in the long-term Strategy "Kazakhstan - 2030" "Ecology and natural resources". In the frameworks of the National Environmental Center for Sustainable Development of the Republic of Kazakhstan (NECSD) in 1999, eight projects on combating desertification were developed and presented at a donor conference and to the Government of the Republic. The realization of three projects which received financial support has begun. Six projects under other conventions have been developed, into which sections on combating desertification are included;

- Two grants were received for the restoration of degraded lands (SGP/GEF), the methodologies on the norms of withdrawal of the resources of land, pastures, vegetative raw material, on criteria and methods of ecosystem transformation assessment, on space monitoring on two polygons in the south of the country were developed. Ecological zoning and desertification assessment in the number of regions (Caspian and Aral Sea) were carried out;

- During the process of implementing the Convention, NGO activities have grown. Now in Kazakhstan there are about 200 environmental NGOs. Some of them are members of the RIOD network. NGOs are implementing some small pilot projects on combating desertification.

4. Measures on social and economic arrangement:

- Due to the new social and economic arrangement of the country, corporatization and privatization of farms land owners themselves in the future will carry out the considerable part of works on the rehabilitation of soil fertility, combating erosion processes and secondary salinization, re-cultivation of lands damaged by technogenic pollution, use of pastures and hay fields. In doing this, they will be using available scientific recommendations on rational land use;

- There have been developed: soil protection technology of land treatment; system of rotation of crops for all natural zones; measures to prevent wind and water erosion of soils, humus loss and secondary salinization of irrigated lands; technology and project of the mountain technique and biological re-cultivation of stripping and mining dumps; measures on the rational use of pastures and hay fields;

- Former collective state farms have been restructured: 97,400 private

economic entities have been created, resulting in the reduction of share of lands used for agricultural purposes, from 81.2 per cent in 1990 to 39.6 per cent in 1999. Since 1991 over 16 million hectares of agricultural lands have been transferred to the villages to supply individual livestock with pasture fodders and to expand individual land plots of the local population;

- Activities to attract international financial and environmental organizations are being carried out to finance and implement environment protection projects. The following GEF projects are being implemented:

  - Conservation *in situ* of mountain agrobiodiversity;
  - The sustainable development of the Aral region;
  - Development of wind energy;
  - Conservation of the Western Tien-Shan biodiversity.

On 12 March 1999 Presidential decree on joining to the Annex of Kyoto Protocol was signed. Works are being carried out on the preparation and joining of the Republic of Kazakhstan to the Convention Annex 1 to the United Nations Framework Convention on Climate Change. Works are being carried out on the preparation of agreements (jointly with USAID/EPIC, WB and UNDP) on support of the development of projects on the Global Carbon Initiative. On 23-25 February 1999 in the cities of Astana and Almaty, seminars were held on the joint work programmes with USAID. 12 seminars have been prepared and held with the participation of international representatives and organizations.

5. Measures on widening public knowledge and awareness of the desertification problems:

- The text of UNCCD has been translated into the state Kazakh language for dissemination among local population;

- An education system is established in educational institutions (schools, lyceums, gymnasiums, secondary specialized schools, higher educational establishments) and out-of-school institutions - young naturalists stations. The main educational means is training in subjects of botany, zoology, biology, natural history.

- The role of mass media has been strengthened (press, TV, radio) in expanding of public knowledge of desertification problems; newspapers "Environmental courier", "Atameken ", Environmental bulletin are being published;

- Under support of international organizations, a number of conferences, seminars have been held;

- In higher educational establishments there is a trend towards the expansion of infrastructure of environmental education; new chairs, courses, master schools on environment are opened;

- Center of environmental information of NGO "Ecology through mass media" has been created which carries out actions to combat desertification, including TV programs, contests. Annually, the Agency on management of land resources publishes the National report on the state of lands in Kazakhstan, on the base of established system of collecting information, provided by the Research Center on land resources;

- In compliance with the Law of the Republic of Kazakhstan "On Environment Protection", activities to combat desertification, on biodiversity conservation and other natural protection activities shall be financed from the following

sources: the republican budget and local budgets, funds of environment protection, funds on environment insurance, own funds of nature users, other funding sources, not prohibited by legislation of the Republic of Kazakhstan;

- From the above-mentioned sources only environment protection funds and nature users own funds are in reality being used for financing nature protection activities. All other funds are practically not being used. The republican and local budgets, which were the main sources of financing environmental activity, at present completely lost their role. Environmental insurance funds are also not available since this form of insurance is not applied in the country;

- Due to the change of the political system and the orientation of the country toward a market economy, the centralized state management of land use has been weakened. Moreover, close economic interrelations of the republics of the former Soviet Union have been strongly disrupted. This has led to the sharp decline in the economic potential of all republics. As a result of this, the ability of financing many economic projects, including those on combating desertification and drought consequences, became limited.

KUWAIT

The State of Kuwait is located among the arid desert belt in the west of continents. Its environment is characterized by an extreme sensitivity due to the delicate balance between various elements such as climate, water, soil, vegetation cover and other living organisms. As a result of human activities and severe climatic conditions, some areas in Kuwait have been exposed to Desertification. However, aridity is a phenomenon that frequently occurs. These two phenomena led to a deterioration of the natural vegetation cover, to the erosion of soil, the deprivation of its productive capacity, sand encroachment on the economic constructions and habitats as well as an increase in sandstorms.

In order to combat these environmental problems, the State of Kuwait considered the protection of the prominent as one of the eminent affairs to be given special attention. In this field it has accomplished and implemented for three decades, various activities related to the protection and promotion of renewing natural resources focusing on the promotion of environmental deteriorated areas, protection of biodiversity, supporting and encouraging agricultural promotion (plant and animal). All this was achieved in addition to carrying out researches and studies, awareness programs and building up human capacity.

State plans and development programs included programs and projects dealing with environment protection and the development of renewing natural resources and Combating Desertification. Different serious matters have been registered among the state promotion scheme for the period 1999-2003:

- Realization of a complementary administration program for coast organization in the state of Kuwait induces an everlasting development and protection of natural resources in the coastal environment;

- Limiting the deterioration of desert lands and rehabilitation of deteriorated areas;

- Development and setting up of the natural reserves.

The State of Kuwait started also to set up a number of strategies which aim at protecting the environment and natural resources, among which there are:

- The environmental strategy of the state of Kuwait;

- A national report has been prepared concerning the aspects of benefiting

from the Agenda 21 including a suggestion of preparing schemes, programs and activities in the field of environment, development and combating Desertification;

- It is expected that after the completion of the preparations of the environmental strategy, various strategies concerned with environment and development will be prepared.

Regarding the establishment of the Environment Public Authority (E.P.A) and public policies on environment protection, it is approved that E.P.A is the official authority responsible for the follow-up and implementation of this Convention and other international conventions related to the environment. On this basis, the E.P.A has established the National Committee to Combat Desertification which was assigned to study the Convention, follow-up all subjects related to it, evaluate Desertification activities, prepare national action programs and a strategy according to the Convention's articles and the Asian Annex.

The Committee held several meetings to prepare the setting up of the national action programs and the strategy. UNDC/UNSO has helped in the preparation of the work plan, sponsored by ERA, containing the way of preparing the national work programs which are supposed to conform and harmonize with the general strategic and planning frame of the State of Kuwait in the field of environmental protection and renewing natural resources' development. They will be linked and complementary with subregional and regional working programs concerned with Combating Desertification and reducing the effects of aridity.

At subregional level, the State of Kuwait has participated in preparatory meetings held in Damascus, Muscat and Dubai in order to set up programs concerned with Combating Desertification in the West-Asian countries, taking into consideration that suggested programs should harmonize with the national working program that is currently under preparation.

E.P.A participates also in meetings and implementation of the Desertification program committee activities, subsidiary of the Arab Ministers Council, responsible for the environment affairs.

At the regional level, the State of Kuwait has participated in preparatory meetings to set up a Desertification Combat program networks for Asia in order to get benefits from these networks and render them harmonious with the national needs in this field.

Furthermore, from the legislative and executive side, E.P.A has studied the actual state of the environment and natural resources. Through analysis of available information, data and the past laws and decisions, it was noticed that there is a need to improve and reformulate laws and decisions by determining standards and environmental stipulations to protect and promote the environment and natural resources.

Among those new laws are:

- Stopping gravel derivation works law;
- Organizing sand derivation works law;
- Organizing pasture law;
- Constructing natural reserves law;
- Environmental Impact Assessment law.

The state of resources and the past experience in the field of environment

and renewing natural resources protection and development were studied in order to get the benefit the preparation of national working programs to Combat Desertification, to avoid disadvantages and enhance positive sides. A database was established for each authority involved in combat of Desertification, and they will be connected among a complete information network in the future.

The most important applied works fulfilled by the state of Kuwait in the Desertification Combat are as follows:

- A great number of laws and decisions have been issued aiming at protecting the environment and natural resources;

- State support to agricultural sector, animal and plant;

- Construction of a number of green belts and establishing a forestry plan;

- Afforestation of sites affected by sand encroachment;

- Constructing nurseries specializing in the production of forests trees;

- Pastoral wealth has been defined and evaluated;

- Animal riches have been determined;

- Rehabilitation of deteriorated lands and range lands;

- Establishment of reserves, fenced areas and natural parks;

10. Carrying out studies and research about sand movement and its accumulation, sandstorm phenomenon, surveying soil, documenting wild life and using satellite and radar images for observation and evaluation works.

The State of Kuwait cares also about the rehabilitation and building capacities, spreading awareness in the field of Combating Desertification and decreasing the effects of aridity and this to all concerned national stakeholders.

While from the institutional side, specialized departments have been formed among the EPA and a law for that matter was issued that determines their field of action, their jurisdiction, their policies and their general objectives among which Desertification Combat and resources' protection is featuring as a main responsibility. Since 1996, the date of their establishment, these departments have been working in coordination with the National Committee for Desertification Combat to define priorities, measures and activities which are classified among national working program. Concerning financial resources and national budgets related to the implementation of the Convention, the State of Kuwait designated budget approbation to every authority working in the field of Desertification Combat (agriculture, range lands, researches, studies. protection of environment, etc.).

However, the awareness raising programs are financed by a symbolic participation of various authorities, either governmental or private, in addition to local banks and different private sector companies.

The State of Kuwait does not get any external support to prepare the national working program for Combating Desertification; it needs a technical and scientific support to Combat Desertification and decrease aridity effects. These needs will be defined in detail among the National Working Program of the State of Kuwait.

KYRGYZSTAN

1. The profile of country, strategies and priorities established within the framework of sustainable development plans and/or policies

The accession of the Kyrgyz Republic to the United Nations Convention to Combat Desertification is registered in the United Nations on 19 December 1997. In Kyrgyzstan the Convention was ratified on 21 July 1999.

Kyrgyzstan ratified the Convention later than other Central Asian republics: there was a long debate in Ministerial circles whether desertification can exist in the mountain country, rich of water resources.

To facilitate the decision-making process, the first National Awareness Seminar was called in Bishkek with the CCD secretariat support on 10-11 September 1997.

The Government entrusted the organization of the Seminar to the Kyrgyz Research Irrigation Institute. Seventy-two participants of the Seminar represented all layers of the population of the Republic - from farmers to the Government. The conclusion was clear: desertification factors are present; the ideas and problems of the Convention are actual for the Republic.

According to the reports of the participants of the Seminar, the general area of territory of Kyrgyzstan of about 20 mln. ha, consists of 10.6 mln. ha of agricultural land, including about 9 mln. ha of pastures, 0.84 mln. ha of forests, 1.36 mln. ha of tillage. About 40 per cent of pastures are degraded; the area of forest plantations was reduced from 1.2 mln. ha in 1930 to 0.84 mln. ha in 1996; 0.77 mln. ha from all of tillage is subject to water and wind erosion; 0.2 mln. ha is salted, 0.03 mln. ha is water logged and swamped.

The scale and pace of land degradation are excessive. The adoption of the purposeful governmental policy oriented to mobilizing all internal resources and the external assistance is necessary. The Convention provides in this plan a unique chance.

At the first National Forum, the Conception of the National Action Programme to combat desertification in Kyrgyzstan was approved. It identified the following priorities of activities:

- Information of the population about the desertification processes,and their possible consequences; enlightenment on the practices, methods and technologies of use of the land and water resources with a view to prevent desertification;

- Institutional measures with a view to strengthening the management system, contributing to the local initiative development and ensuring employment;

- Improving of the degraded lands in the Kyrgyz Republic with a view to prevent salinity, water and wind erosion of soils, as well as to increase the land productivity for the rural economy rising and poverty eradication;

- Reconstruction of the pasture potential and livestock breeding development;

- Enhancing of the forest areas of the country - forest restoration with a purpose of the slope and light soils fixation; increasing of the water content of upper watershed;

- Monitoring of desertification, creation and supporting of the sustainable process of combating desertification.

2. The institutional measures taken to implement the Convention

Political, state and legislative systems of the country are being examined to evaluate the institutional capacities to inplement the UNCCD.

The Ministry of Environmental Protection of the Kyrgyz Republic (further - Ministry) is the central body for the state management of the protection of the environment, hydrometeo forecasting, control of their condition and rational use of natural resources.

Apart from the Ministry of Environmental Protection, the Ministry of Agriculture and Water Resources, which is in charge of land management and irrigation, plays a key role in combating desertification.

Costs of protection and management of forests are met by the State Forest Agency.

The State Agency on Land and Land Resources was established to introduce a land cadastre, monitor the state of land resources, preserve and upgrade their quality and enforce the land legislation and regulations.

The Ministry of Emergency Situations and Civil Defense of the Kyrgyz Republic is the central body of the executive power, which supervises and coordinates the activities in the field of:

- Prevention and liquidation of emergency situations;
- Civil defense;
- Mobilization of the economic sectors of the Republic.

For the coordination of activities in the Republic and for liaison with the CCD secretariat, the Office to Combat Desertification (UNSO/UNDP), Committee of Science and with UNITAR the Kyrgyz National Center to Combat Desertification - Kyrgyz NCCD - was created at the Kyrgyz Research Irrigation Institute of the Ministry of Agriculture and Water Economy of the Kyrgyz Republic.

At the First National Forum (2-3 November 1999) the Coordination Board (CB) on CCD was established in Kyrgyzstan at the Ministry of Agriculture and Water Resources.

The Coordination Board is a body for the CCD implementation in Kyrgyzstan and executes the following functions:

- Considers the issues of the participants identification and selection of priorities, informational, institutional and financial maintenance;
- Submits proposals to the Government, Jogorku Kenesh, international organizations;

Chairman of the CB	Minister of the Agriculture and Water Resources of the Kyrgyz Republic;
Deputy Chairman	Vice President of the Congress of Local Communities;
Deputy Chairman	National coordinator for the CCD;
Members of the CB	representatives of the Ministries and Departments, Programs and Projects, Local Bodies, non governmental and community based organizations, mass media.

The analysis of the institutional infrastructure lead to the conclusion that at the first stage there is no need in changes and innovations. It is most important to work out the concept of CCD implementation and to define the UNCCD interaction with existing structures, to link NAP/CCD to the projects already implemented in Kyrgyzstan, and to the laws of land using.

3. The participatory process in support of the preparation and implementation of the action programme

The effectiveness of CCD implementation, directed to the improving of the living conditions of the planet population will depend on the awareness of people about CCD, and about efforts of the states in its implementation.

Ministries of the Justice, Finance, Agriculture and Water Economy, Protection of the Environment, Health, Emergency Situations and Civil Defense, Foreign Affairs participated in the process of country's accession.

After coordinating with all Ministries the Decree about acceptance of the Law of the Kyrgyz Republic «About the Accession of the Kyrgyz Republic to the UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or desertification, Particularly in Africa » No 1372-1 of April 23, 1999 and Law of the Kyrgyz «About the Accession of the Kyrgyz Republic to the UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or desertification, Particularly in Africa » No85 of July 21, 1999 were adopted and approved by the Assembly of the Jogorku Kenesh.

Mass media was actively used for the awareness raising about the CCD.

A number of the republican newspapers published articles about problems of desertification, pastures degradation, land salinization, wind and water soil erosion, loss of the forests and effective measures for the solution of those problems.

Some video films devoted to the above problems were also made.

The following institutes are participating in the NAP process in the Kyrgyz Republic: Institute of agriculture, Institute of forages and pastures, Institute of Forestry, Institute of irrigation, Institute "Żyrgyzhyprozem", Institute "Żyrgyzhyprovodhoz". These institutes are involved in the programs and projects connected with the rational land tenure and protection.

The main NAP participants will be the land cultivators, farmers, peasants, agricultural cooperatives.

The most active part in the NAP development was taken by the following NGOs: Aleine, Socium, AARY, SOS - Land, Counterpart Consortium.

Without due coordination, work of the Kyrgyz NCCD and the activities of NGOs and CBOs can not give positive results.

Therefore at the Kyrgyz NCCD the Coordination Office for work with NGOs and other structures (CO NGOs)was organized. CO NGOs is equipped with necessary literature, visual materials, office equipment, video-technic, and is open for all interested parties, including NGOs.

In July-August two Regional Workshops were held. The purpose of the Workshops was the identification of main desertification problems at the local level. The Workshops have shown that the NCCD of Kyrgyzstan selected correct tactics to start combating from the rayon level, to search for ways of land users activation, and further promoting to the national level.

The first National Forum was also convened (2-3 November, Bishkek). As a result of the National Forum, the Conception of the National Action Programme to combat desertification in Kyrgyzstan was adopted.

4. The consultative process in support of the preparation and implementation of the National Action Programme and the partnership agreement with developed country Partners and other interested entities

At the initial stage of the NAP preparation and implementation, when there are no particular proposals and requests for donor assistance, the external support is expedient for planning within the framework of the prepared in the republic projects under the line of the World Bank, ADB, TACIS, etc.

For example, under the World Bank pilot project (US$3,5 mln.) on Forestation, Erosion Control and Water Management, forest planting and erosion protection technologies of irrigation are being used to protect land in the Jalal0Abat oblast against land erosion and landslides. The Finnish Government has approved a project (US$300,000) under the line of the International Fund for saving the Aral Sea.

Other examples are the small grants (UNDP) projects, programme for the preparation of the International Year of Mountains in 2002, programmes for irrigation and agriculture of the World Bank and ADB.

The national coordinator presented the plans of the CCD implementation in 10-13 May 1999 in Bishkek at the International Conference of the Mountain territories problems with the participation of official representatives from Switzerland, Germany, Turkey and Nepal.

Under the attention of the NCCD, there are future projects of the creation of Water Users Associations and on farm irrigation (US $20 mln. from the World Bank) and agricultural development in the Chui oblast including the improving of the meliorative condition of lands (US $40 mln from the ADB).

Under the CCD secretariat initiative and with financial support by GTZ, Kyrgyzstan will be host of the Meeting on the preparation of the Subregional action Programme to combat desertification in the Aral sea basin in the context of the UNCCD.

The Kyrgyz institutes are also active participants of the TPN1, TPN2, and are planning to participate in the TPN3, TPN4, TPN5.

5. The measures taken or planned within the framework of the national action programmes, including measures to improve the economic environment, to conserve natural resources, to improve institutional organization, to improve knowledge of desertification and to monitor and assess the effects of drought

The Land State Program for the period till 2005 provides the following basic directions for the rational use of the land resources and its protection:

- Measures to improve the use and protection of land resources;

- Implementation of the state control of the land use and protection with the purposes of observance of the land legislation of the Kyrgyz Republic;

- Establishment of the unified system of the land cadastre and registration of the lands and real estate, and creation on their basis of the full land database;

- Implementation of the land monitoring;

- Creation and conducting the control system of land resources;

The Agricultural Lands Monitoring Program of the Kyrgyz Republic for the period 1999-2005 and consequent years is developed pursuant to the Land Code of the Kyrgyz Republic.

The main tasks of the land monitoring for the period 1999-2005 and the consequent years are:

- Formation of the normative - legal and scientific - methodical bases of the lands monitoring;

- Zoning of the territories of the Kyrgyz Republic with allocation of negative processes by kinds and degree of their effect on the land condition;

- Establishment of information base for the land monitoring.

Some main tasks of the Forest National Program for the period 1995-2000 in the field of the forest reproduction are:

- Recovery and improving of protective functions of all forests of the Republic;

- Strengthening water protection, climate-regulation, and other natural properties of the forest in the interests of health of the people, better environment and economic development;

- Cultivation of the planting material for maintenance of forest production and with the gardening purposes;

- Rational use of state forest fund lands;

- Implementation of measures assisting the natural restoration of forest by the appropriate methods to natural conditions;

There is the Araket Poverty Eradication National Program (1998-2005). The constant increase of a standard of living and poverty eradication in the Kyrgyzstan is put forward as the main priority of all economic, financial and social policy of the State, ultimate goal of the reforms in the country.

The mass poverty eradication covering almost the half of the population of the Republic, is the long-term strategic problem; its solution depends on the success of reforms and on reaching the main objectives of the perspective plan of socio-economic development of the country.

On the basis of the analysis of scales, causes and structure of poverty the present National Program determining main ways and methods of it eradication in the country is developed.

The main share of poverty falls on the village population of the country. It is due to the fact that in the village district live 2,7 mln. people, or more than 60 per cent of the republic population.

In 1996 the National Plan of the Environmental Protection was established. It is recognized that especially in the key sectors (agriculture and mining industry) exist a number of important environmental problems which are connected with economic growth and development. In this connection special attention is given to the issues of land resources. The causes of land low efficiency in the context of agricultural production, management of live-stock farming and forest economy are being considered.

6. Financial allocations from national budgets in support of implementation as well as financial assistance and technical cooperation received and needed, identifying and prioritizing requirements

Due to economic and social difficulties of the transition period, there has been a dramatic decrease in the state financing of the activities to tackle desertification. In view of this, activities to combat desertification should rely on innovative sources of financing and on resources generated by the affected farmers and private sector.

At present, there are two major sources of state funding of environmental protection: (i) the Republican budget and (ii) extra-budgetary income formed basically from fines and environmental taxes.

In order to generate long-term investments for infrastructure development and public services, a three-year rolling Public Investment Programme (PIP) has been recently introduced and implemented. The main focus of the PIP is on investment in public infrastructure and services such as roads, telecommunications, energy, urban infrastructure, health, education, agriculture and environmental protection. The major share of financing for PIP is sought from external funding agencies on concessional terms. Domestic financing is severely constrained and is expected to be limited primarily to financing local counterpart contributions within externally financed projects.

International financing provides only short-term assistance. However, it is vital that more sustainable mid- and long-term financial mechanisms are sought for continuing land protection.

The proposed national financial mechanism for CCD is the National Desertification Fund (NDF) administered by the Steering Committee consisting of the high-level representatives of the government agencies and ministries involved, wide layers of civil society, including NGOs and CBOs, local authorities, donor community, academic and educational institutions. This fund will potentially become an important internally-funded instrument for combating desertification and related environmental issues.

At present the following programs are financed from the National budget: Land, Forest, Araket, Agricultural Lands Monitoring Program (see para. 5).

In support of the NAP preparation, through the UNCCD secretariat it was received:

- In 1997 - US$8,000 for holding the National Awareness Seminar on CCD and accession of Kyrgyzstan to UNCCD;

- In 1998 - US$26,300 for support and strengthening of the National Centre to Combat Desertification;

- In 1999 - US$50,000 through UNSO/UNDP for preparation of the First National Forum and definition of the Conception and NAP structure.

The financing and administration of the projects were conducted successfully through local UNDP Office in Bishkek.

The obtained financial and methodical support from the UNCCD secretariat and UNSO has helped Kyrgyzstan to advance considerably in understanding the CCD by the population and state bodies, involving stakeholders in process of the NAP preparation. The appropriate reports have been presented to the UNCCD secretariat, UNSO and donors.

In 2000, through the UNCCD secretariat, US$33,000 are received for the project on strengthening the focal point.

Kyrgyzstan has problem of the fund searching for the NAP completion and convening the Second National Forum in the second half of 2000. The correspondence with donor countries is conducted: Finland, Japan, Switzerland.

For the NAP completion and realization of the Second National Forum US$50,000 is needed. In this regard consultations with ADB are conducted. The preliminary consent is obtained.

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